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The BLS Employment Cost Index [1]

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Introduction

More and more, we are relying on statistical data in economic analyses, in studies of collective bargaining, and in other investigations. A self-reinforcing trend is evident: Availability of data stimulates the development of quantitative analytical techniques, and advances in such techniques whet the appetite for more data.

And, with a growth of sophistication in working with numerical data, we are coming to recognize that our conclusions may depend upon which statistical series we choose to look at. There may be several available for analysis and, unfortunately, they may not all give out consistent signals. This should not be interpreted as an indictment of the data now available. It is more in the nature of an indication that, because of new needs, existing series are often put to uses for which they were not originally designed.

These remarks are well illustrated in the wage statistics field. There is a general recognition that existing series—frequently designed for other purposes—are quite inadequate for comprehensive analyses of changes over time in employee pay.[2] All major compensation series have recorded pay gains over the long run, but they have often shown different rates of increase, particularly over phases of the business cycle.[3] In addition, most series are limited in the types of compensation, industries, and classes of workers covered; published detail may be limited; and, of primary importance, key existing series are often difficult to interpret as measures of change.

The Bureau of Labor Statistics' new Employment Cost Index (ECI) should help meet these problems by providing a measure of variations over time in the prices paid by employers for labor services. The new Index, which was released in its initial form in June 1976, presents changes in the price of the standardized mix of purchased labor services, much as the Consumer Price Index (CPI) presents changes in the price of a standardized market basket of consumer goods and services.[4]

A brief review of the forces leading to the new series is instructive. In recent years, inflationary developments in the economy have heightened the interest of economists and policymakers in trends in compensation, and particularly in the relations between pay changes and shifts in other economic variables such as the price level, pro-

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[1] This article is an outgrowth of a description of the Employment Cost Index (ECI) published in the *Monthly Labor Review*, July 1975. Exhibit 2 was prepared by Arthur Sackley, ECI project director in the BLS Division of Trends in Employee Compensation. It appears in the *BLS Handbook of Methods for Surveys and Studies* (Bulletin 1910, 1976), p. 190.

[2] See Gardner Ackley, "Some Observations on the 1976 Outlook," *Economic Outlook USA*, Winter 1976, p. 10; John E. Maher, "An Index of Wage Rates for Selected Industries, 1946–1957," *Review of Economics and Statistics*, August 1961, pp. 277–282; Geoffrey H. Moore, *Contributions to Economic Knowledge Through Research*, Forty-Seventh Annual Report (New York, National Bureau of Economic Research, 1967), pp. 4–6; George L. Perry, "Real Spendable Weekly Earnings," *Brookings Papers on Economic Activity*, 3: 1972, pp. 779–787; and Norman J. Samuels, "Developing a General Wage Index," *Monthly Labor Review*, March 1971, pp. 3–8.

[3] For example, although the rate of increase in average hourly earnings of manufacturing production workers was somewhat greater between December 1971 and December 1972 than during the same period a year earlier (7.3% compared with 6.6%), general wage-rate adjustments effective in 1972 were, on the average, considerably below those of the preceding year (5.1% in 1972 and 6.4% in 1971).

[4] The parallel between the Consumer Price Index and the Employment Cost Index is basically in the standard approaches to measuring price changes through the computation of index numbers. When matters of detail are considered, numerous differences between the two indexes become apparent.

ductivity, employment, and unemployment.[5] Numerous studies have focused on supply and demand conditions in the labor market and their effect on the price of labor that employers, workers, and unions find acceptable as part of the terms and conditions of employment. Other investigations have considered, in turn, the effects of changes in this price on the performance of the economy. These interests have created a demand for a statistical series showing how the price of labor varies over time.

Because no comprehensive series of this type currently exists, analysts commonly have relied upon movements of average hourly earnings. Although such data are timely and provide considerable industry detail, they are not adequate indicators of changes in the price of labor. Derived by dividing employer payroll outlays by aggregate hours paid for, hourly earnings averages are influenced not only by rates of pay but also by overtime and other premium paid work, the industrial and occupational composition of the work force, and the level of output where incentive pay plans are in effect. Moreover, the data are limited to production or nonsupervisory workers and generally exclude employer outlays for fringe benefits.[6]

The Bureau's Hourly Earnings Index gives a closer approximation of underlying wage rate movements because it results from adjusting average hourly earnings data to exclude the effects of fluctuations in overtime premiums in manufacturing (the only sector for which overtime data are available) and shifts in the proportion of workers in high and low wage industries. The Hourly Earnings Index has been widely used since its introduction in 1971, but it is far from an ideal measure of change. (Exhibit 1 compares key features of BLS pay series.)

The New Series

The Employment Cost Index is being developed to meet this need for a timely, more accurate, and comprehensive measure of changes in the price of labor, which is a key determinant of changes in the demand for labor, in production costs, and thus in product prices.[7] Its survey design and conceptual framework have been developed with various economic analyses concerning pay changes and other variables in mind.

Establishments of all sizes and in all civilian industries are within the scope of the survey, which will cover all levels of workers, supervisory and nonsupervisory. It will exclude only the self-employed, proprietors, unpaid family workers, and owner-managers.

The working definition given to the price of labor is also comprehensive—employer expenditures per hour worked for obligations incurred in employing labor; in short, the compensation package. (The reasons for and implications of this definition are considered below.) Outlays for fringe benefits are included along with those for wages and salaries.

Basically, the Employment Cost Index will provide an overall measure of compensation change in which the behavior of individual components—hourly employer expenditures to or on behalf of workers in specified occupations within individual establishments—are incorporated in accordance with their relative employment weights. The Index will express the average price of labor in a given period in relation to a base period price of 100. To minimize the effects of shifts in employment, fixed (base period) weights will be used in combining individual observations.

In essence, the Employment Cost Index will measure changes in the transactions price in the labor market, using standardized occupational units of observation. To maintain or expand the size of its labor force, a firm must offer, on the compensation side, a package of wage rates and supplementary benefits sufficient to attract qual-

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[5] For instance, the development by the Pay Board in late 1971 of a basic 5.5% lid on permissible annual increases in the rate of compensation was an effort to hold money wage gains to a rate consistent with a 3% annual gain in productivity and a 2.5% annual rate of advance in prices.

[6] These remarks do not imply that changes in hourly earnings are of no economic significance. They apply solely to the use of earnings changes in studies calling for the investigation of pure price changes. In addition, hourly earnings data are of course quite important as measures of the level of employee earnings and of industrial and geographic differentials in that level. The problem of analyzing average hourly earnings data is considered in John T. Dunlop, *Wage Determination Under Trade Unions* (New York, Augustus M. Kelley, Inc., 1950), pp. 19–27. See also Victor J. Sheifer, "The Relationship Between Changes in Wage Rates and in Hourly Earnings," *Monthly Labor Review*, August 1970, pp. 10–17.

[7] During World War II, the Bureau produced a somewhat similar measure, the Urban Wage Rate Series. See "Wartime Wage Movements and Urban Wage-Rate Changes," *Monthly Labor Review*, October 1944, pp. 684–704.

ified workers for specific jobs. When workers are hired, an employer incurs an obligation to meet the cost of the compensation package. The price of labor is thus the cost to the employer of that package per hour worked. The change in the price of labor is the period to period shift in the cost of the compensation items—that is, the hourly employer obligations. The standardization issue in index number construction is to hold constant the set of jobs priced and their

EXHIBIT 1. SELECTED CHARACTERISTICS OF BLS MEASURES OF CHANGE IN HOURLY COMPENSATION

Characteristic	Employment cost index (when completed)	Average hourly earnings	Hourly earnings index	Compensation per man-hour	Changes effective in major collective bargaining units		Employee compensation and payroll hours
					Wage-rates only	Wages and benefits	
Data published..	Index	Level data	Index	Index	Cents per hour and percent change	Percent change	Level data
Frequency of publication	Monthly	Monthly	Monthly	Quarterly	Quarterly	Annually	Biennial [1]
Date of commencement	December 1975 [2]	1964	1964	1947	1959-(annually). 1973-(quarterly)	1968	1966 [3]
Industrial coverage	Total civilian economy	Private nonfarm economy	Private nonfarm economy	Private business sector	Private nonfarm economy...	Private nonfarm economy	Private nonfarm economy[4]
Workers included	All employed workers	Production and nonsupervisory workers	Production and nonsupervisory workers	All workers.....	Production and nonsupervisory workers in bargaining units with 1,000 workers or more	Production and nonsupervisory workers in bargaining units with 5,000 workers or more	All employed workers
Payments included	Wages and salaries plus employers' contributions for social insurance and private benefit plans	Wages and salaries	Wages and salaries	Wages and salaries plus employers' contributions for social insurance and private benefit plans	Wage rates	Wage rates and private supplementary benefits	Wages and salaries plus employers' contributions for social insurance and private benefit plans
Effect of shifts in employment among industries.	Excluded	Not excluded	Excluded at 3-digit SIC level of detail	Not excluded	Excluded	Excluded	Not excluded
Effect of shifts in employment among occupations.	Excluded at 3-digit Census occupational level of detail	Not excluded	Not excluded	Not excluded	Excluded	Excluded	Not excluded
Data source	Statistical survey	Statistical survey	Recomputation of data collected for measuring average hourly earnings	Compensation data essentially from National Income Accounts. Corresponding manhours estimated within BLS	Developed largely from secondary sources	Developed largely from secondary sources	Statistical survey

[1] For private nonfarm economy as a whole.

[2] Quarterly measure of wage and salary change in the private nonfarm sector, excluding households.

[3] Surveys with more limited coverage go back to 1959.

[4] A separate study has been made of State governments.

weights so that measured cost changes are not affected by shifts in occupational employment.

Such a measure reflects an important input into employer hiring and pricing policies; however, it does not directly reflect changes in unit production costs. An increase in compensation rates may result in a decision to contract out work or in the substitution of a different type of labor or of machinery for labor, all of which affect production costs per unit of output. The new series is a measure of price changes in the sense that the CPI measures changes in prices of specified goods and services, rather than the cost of living.

The issues in developing the ECI fall into two categories: (1) defining the price of labor concept and specifying in measurable terms the idea of changes in that price and (2) establishing statistical methodology for implementing the conceptual design.[8] Those are discussed below.

Measuring Wage and Salary Changes

Although superficially a simple idea, a host of conceptual and data collection problems are inherent in the overall measure of changes in the price of a unit of labor services. Since the issues differ somewhat for wages and salaries and for supplementary benefits, these components of employee compensation are considered separately.

The basic approach to measuring wage and salary changes is straightforward. The unit of observation is an occupation in a specific establishment. Since pay rates are generally set for the jobs performed rather than for the people filling them, the occupation level seems most appropriate for observing rate changes.

The Employment Cost Index uses the census occupational classification system's three-digit code level of detail (accountants, carpenters, and so forth); this classification system encompasses all specific jobs in the economy within 441 occupations. These occupations, though broader in scope than those studied in other BLS occupational wage surveys, can be defined within specific establishments.

For each surveyed occupation within an establishment, average straight-time hourly earnings are obtained for the pay period encompassing or closest to the 12th of the survey month. Data collected are average wage and salary rates in an occupation, not aggregate payrolls divided by aggregate hours. Straight-time earnings are defined as total earnings before deductions, excluding premium payments for overtime, weekend, holiday, and late-shift work. They include production bonuses, commissions, and cost-of-living allowances. As discussed below, earnings of salaried employees and those paid under incentive wage systems are converted to an hourly basis.[9]

Earnings data are collected regularly from a fixed sample of establishments. To eliminate the influence of employment shifts among occupations, establishments, and industries, the reported occupational earnings data are averaged using constant (base period) weights for each unit.[10] This process provides a comprehensive measure of wage change which, for many purposes, is far more satisfactory than those currently available. Moreover, since the occupations studied are not limited to production and nonsupervisory workers, the Index is more comprehensive than most other available series.

This approach reflects a compromise between theoretical ideals and the state of the art in data collection. Employers normally purchase a continuing flow of labor services, not simply a given number of units; however, the price concept relates money outlays to a definite number of units purchased or sold. In the case of labor, the unit is normally measured in terms of time.

When wages are expressed in weekly, monthly, or annual terms (that is, when workers are salaried), they must be converted to an hourly basis to be directly comparable with hourly wages. No difficulties arise if the "terms of trade" explicitly or implicitly provide for working a set number of hours. Conversion of weekly

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[8] The two categories, of course, are not independent of each other. See Janet L. Norwood, "Should Those Who Produce Statistics Analyze Them? How Far Should Analysis Go?" *Statistical Reporter*, November 1975, pp. 81–87.

[9] Data collection is currently limited to the private nonfarm economy, excluding households. Within this sector, earnings data are being limited to cash wages and salaries. Inclusion of perquisites and payments in kind will be considered when the project expands to include agriculture.

[10] The Employment Cost Index approach has been incorporated in the Bureau's area wage survey program. See James N. Houff, "Improving Area Wage Survey Indexes," *Monthly Labor Review*, January 1973, pp. 52–57; and Deborah B. Talbot, "Improved Area Wage Survey Indexes," *Monthly Labor Review*, May 1975, pp. 30–34.

or monthly salaries to hourly equivalents is based upon the standard weekly hours for which the employee receives regular straight-time salary. If the number of working hours is not fixed, as for many supervisory employees, determination of an hourly wage is somewhat arbitrary. Nevertheless, a reasonable approximation of an average or normal workweek is feasible. In the absence of other information, salaried workers' pay is converted to an hourly basis for the Employment Cost Index on the assumption that employees not working fixed hours put in the same number of hours per week as those in the same establishment who do.

Unfortunately, a working definition sufficient for static analysis may be incomplete when dynamic considerations are introduced. Although we have talked about the price of labor, we have not looked at the meaning of changes in that price. For example, pay increases associated with greater proficiency in a job should be distinguished from increases in pay unrelated to job performance. We are, of course, raising here the perennial problem of coping with quality changes in compiling price indexes.[11]

Ideally, the Employment Cost Index should reflect only increases unrelated to improved performance.[12] It should measure changes in rates of pay for specific jobs, not the individuals filling those jobs. But how in a mass survey operation does one identify those in-grade wage adjustments for individuals—regardless of whether they are labeled longevity or merit increases—which are pay adjustments in the desired sense? Similarly, how can one account for pay changes associated with turnover of personnel in a job? Are they simply a function of varying worker quality? Finally, the concept of a pay increase may be influenced by the breadth of the definition of a specific job. One conclusion seems inevitable: Considering the current state of the art, despite conceptual problems, the Employment Cost Index must, as a practical matter, be a measure of change in occupational averages of straight-time hourly earnings and, therefore, influenced by turnover of workers in specific occupations, all length of service or merit pay increases, and shifts in the relative importance of individual company jobs falling in a survey occupation.

The Employment Cost Index, therefore, is not an index of pure wage-rate change. Nevertheless, the absence of adjustment for the impact of quality changes within a unit of observation should not be overemphasized. Long-run improvements in the quality of labor are of undoubted importance; however, such quality increases would appear to be associated more with movements among occupations (which are accounted for) than with increased proficiency in the same occupation.

A separate issue concerns workers paid on an incentive basis. Here, either the piece rates or the resulting hourly earnings can be viewed as the "real" wage rate. Consideration of piece rates *per se* necessarily excludes gains for salespeople associated with increases in the prices of products sold. (Commissions for these employees often are expressed as a percent of the value of sales.) Moreover, how in the actual conduct of a survey would one disentangle piece-rate adjustments designed as general wage changes from the myriad adjustments in piece rates as a result of modifications in the specifications of individual jobs? Piece rate realistically can be compared only in industries with fairly simple technologies and relatively uncomplicated pay systems.

On the other hand, if we concentrate on changes in hourly earnings of piece-rated workers, all rate changes that have an impact on earnings, regardless of cause, affect the Index. In addition, pay changes resulting from irregular fluctuations in production runs influence the overall measurement of wage-rate change.[13]

Since neither alternative is ideal for computing the Employment Cost Index, the decision has been made to measure hourly earnings of incentive workers, rather than their piece rates, be-

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[11] See Thomas W. Gavett, "Quality and a Pure Price Index," *Monthly Labor Review*, March 1967, pp. 16–20; and Jack E. Triplett, "Determining the Effects of Quality Change on the CPI."*Monthly Labor Review*, May 1971, pp. 27-32.

[12] To use a Marshallian concept, the Employment Cost Index should reflect only adjustments in efficiency-earnings: "That is, earnings measured, not as time-earnings are with reference to the time spent in earning them; and not as piece-work earnings are with reference to the amount of output resulting from the work by which they are earned; but with reference to the exertion of ability and *efficiency* required of the worker." Alfred Marshall, *Principles of Economics* (8th ed; London, Macmillan and Co., 1920), p. 549.

[13] In this instance, the Index is also influenced by earnings gains from loosened incentive standards. It can be argued that such pay boosts properly should be treated as increases in the price of labor.

cause the former approach is simpler to implement in data collection.

Despite the limitations just indicated, the prime mover of the Employment Cost Index will undoubtedly be changes in wage rates, and for most purposes movements in the Index can be regarded as indicating movements in wage and salary rates. Moreover, efforts are being made to enhance the homogeneity of units of observation. At present, where both part- and full-time workers are found in an occupation, only the larger group is studied. A similar approach is followed where both time and incentive workers are found in a single occupation within an establishment.

As noted, fairly broad occupational groupings currently are studied. While a finer job classification system would be preferable, the information necessary for selection of a probability sample now exists only with reference to the census classifications. Nevertheless, efforts are now being made to overcome this limitation by developing techniques for subsampling specific company job titles from broad preselected occupational categories and then confining data collection to these narrower groupings, each of which becomes a unit of observation.[14] If successful, this modification will gradually be introduced into the overall survey design.

The current approach to measurement was arrived at only after careful consideration and rejection of alternative techniques. For example, the Bureau now directly measures general wage-rate changes for production and related workers in manufacturing industries. At first glance, it might appear that this procedure would be desirable for the Employment Cost Index. The fatal problem, however, is that—particularly in nonunion, white-collar employment—many true wage-rate changes are made on an individual employee basis and thus would go undetected in a survey of general wage changes.

An intriguing alternative, proposed by Professor Richard Ruggles of Yale University, involves the study of a fixed panel of workers in sampled establishments. Data on pay rates, job classification, and demographic characteristics would be obtained. This approach would provide data inputs required for ECI computation and also would yield information significant for analyzing movements of the Index. In addition, it would permit the creation of a data base for a variety of independent statistical analyses. Unfortunately, to yield sufficient occupational detail, this approach requires a larger sample size than is now utilized and, hence, is more expensive. The proposal is currently being reviewed within the Bureau of Labor Statistics.

Measuring Benefit Changes

At present, published ECI data are limited to changes in average straight-time hourly earnings. Work is now under way to expand the Index into a measure of change in total compensation by adding data on costs incurred by the employers for supplementary benefits. Benefit expenditure information will be collected from the establishments reporting wage and salary data.

The procedures for incorporating benefit data have been developed in relation to the price-of-labor concept underlying the Index and the meaning of changes in that price. Moreover, the techniques have been evaluated in terms of their suitability with respect to ease of data collection and processing.

Many of the conceptual problems in developing the Employment Cost Index reflect the essentially abstract nature of the price-of-labor idea. This price is not directly visible in labor market transactions. It can best be described as a multidimensional standard which, together with other factors such as the volume of work performed, determines the aggregate employer payment to or on behalf of each worker.[15]

A key issue stems from the rapid growth of fringe benefits. While at one time employee compensation could largely be equated with straight-time wages per unit of time worked or

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[14] In addition to increasing the homogeneity of data collection units, this approach, by starting with broader occupational categories, lessens the possibility of non-matches in establishments and thus enhances the cost-effectiveness of the sampling techniques.

At present, company job titles or workers may be subsampled in instances where a survey occupation encompasses a substantial number of workers or specific jobs in an establishment. The findings are then projected to the total survey occupation.

[15] Difficulties with the price concept are not unique to the labor market; they also apply to analyzing product market transactions—for example, the treatment of rebates and credit terms.

unit of output produced, worker remuneration now includes various forms of premium pay; payments for time not worked, such as vacation and holiday pay; and employer contributions to public and private pension and welfare programs. It is no longer sufficient to define the price of labor as a wage rate; the concept must now encompass the total employee compensation package.

To combine individual benefit practices with wage rates in a measure of total compensation, it is necessary to find a common denominator. This could be a subjective measure of worker satisfaction or an objective measure of money flows. The objective approach, of course, is to be preferred from the standpoint of data collection.

Regarding the latter approach, there are two concepts of money flows. Deferred payments through employer-financed pension and welfare funds do not pass directly from employer to employee; the rate of compensation may be viewed as employer payments or as worker receipts, and the two need not be equal.[16] The employer-payment view is the appropriate one for the Employment Cost Index since it is consistent with the uses perceived for the series. As already discussed, they call for a measure of change in rates of pay in a cost-of-production context. The Index is designed to measure money obligations employers assume when they hire labor-obligations which affect decisions regarding employment, output, and prices.

As with wages and salaries, expenditures for benefits must be reduced to hourly terms. This raises an important issue. Should pay be expressed in terms of hours worked or hours paid for? With vacations, holidays, sick leave, and the like, not all paid hours are in fact worked. Moreover, since the importance of paid time not worked has been growing, relating a constant volume of pay to fewer working hours yields a higher hourly rate. Since the new series defines the price of labor as total employer payments per unit of time made available by workers, it logically follows that these outlays should be expressed in terms of hours worked.[17]

Indication and measurement of changes in the price of labor must recognize that employer outlays for fringe benefits may fluctuate even if the underlying practices do not—for example, vacation expenditures normally will increase if the average length of service of a company's work force increases, even with no change in vacation schedules. Benefit costs vary with changes in practices, composition of the work force, wage level, cost of providing services, actuarial assumptions, and intensity with which the labor force is utilized. In addition, outlays for funded benefits may fluctuate from year to year depending upon annual profits. Clearly, the Employment Cost Index should not reflect all these forces.

It is necessary, therefore, to define precisely those expenditure changes which are to be reflected in the Index. A workable approach becomes apparent when we recognize that the ECI standardization of units of observation does not require holding constant all developments within those units. When examining individual developments, the relevant criterion is whether or not each particular change in benefit outlays is a modification of the rate of labor cost obligations assumed by the employer.

Thus, increases in the volume of overtime worked should not affect the Index since the transactions price is not altered. Similarly, the Employment Cost Index should not reflect year-to-year fluctuations in employer payments for pension programs which are independent of actuarial factors, since these fluctuations are not related to obligations incurred in hiring.

On the other hand, a number of changes—in addition to those in benefit practices—do affect the transactions price and should be reflected in the Employment Cost Index, including changes caused by external forces, for example, social security tax rate changes, changes in pension contribution rates dictated by actuarial considerations, changes in life or medical insurance premium rates, and changes in contribution

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[16] This distinction raises a theoretical issue. If the relevant concept of money compensation differs for workers and employers, how do we define an appropriate scale for the vertical axis of the usual supply and demand diagram?

[17] From the worker's point of view, increased paid leave means more leisure time but, normally, not additional money (assuming the leave time is not in fact worked). Additional paid leave would not be reflected in a series whose denominator is hours paid for, but would be reflected in an hours-worked series. In the former case, neither the numerator nor the denominator would change. In a sense, pay for time not worked may be considered deferred compensation for hours actually worked.

In keeping with practices in other surveys, the Employment Cost Index defines hours worked as plant hours—that is, coffee breaks, washup time, and so forth are included in working time.

rates to SUB funds determined by the level of the funds.[18]

Data collection procedures fall into four steps:

1. Identify base period benefit practices.
2. Determine hourly expenditure rates for each benefit.
3. Determine when appropriate changes have occurred.
4. Redetermine expenditure rates when such changes are found.

Benefits studied are essentially those in the Bureau's surveys of employee compensation and payroll hours, including premium pay, pay for leave time, saving and thrift plans, and employer expenditures for retirement, life insurance, unemployment, and health benefit programs. It should be remembered that since employers normally do not purchase, and workers do not offer, a single hour of labor, both sides consider (in addition to basic wage rates) the length of workweek and, at times, the possibility of augmenting straight-time earnings by working overtime, late shifts, or other premium paid hours. Changes in employer obligations to provide work at premium rates should therefore be included in a cost-of-labor index. On the other hand, the Employment Cost Index does not include:

1. Items reflecting costs of doing business, such as relocation and tool allowances.
2. Benefits for which costs to the employer normally are not charged to labor accounts, such as cafeteria and parking facilities.
3. Benefits creating difficulties in data collection and for which overall costs to the employer are nominal, such as stock options and incidental time off with pay during the regular work day.[19]

Hourly expenditure rates in the initial survey period (hereafter referred to as the base period) are determined for each benefit and added to occupational straight-time hourly earnings to derive a measure of hourly compensation in a unit of observation. The manner of determining hourly expenditure rates is flexible. Where employer expenditure obligations are directly expressed as a rate—for example, a dollars-per-month-per-employee amount for health benefits, a cents-per-hour contribution to a union-management pension fund, or a premium rate per $1,000 of life insurance coverage—that rate is utilized after conversion of cents-per-hour worked terms. A second approach is illustrated in paid leave items. Here, an hourly rate normally is derived by determining average annual hours of leave per employee in an occupation under current leave provisions, multiplying this by the current hourly wage or salary rate, and then dividing by annual hours worked. Where these approaches cannot be implemented—as in the case of many pay-as-you-go financing arrangements and discretionary pension funding—aggregate expenditures per employee for the current practice are determined over a representative period and divided by hours worked in that period.[20]

An Employment Cost Index Manual of Benefit Descriptions has been prepared that both describes the individual benefits studied and identifies, for each benefit, changes consistent with the overall ECI concept of change.[21] In the absence of any such change in an individual benefit, the hourly expenditure rate determined for

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[18] In a world of perfect foresight, there would never be errors in predicting employee turnover, earnings of trust fund investments, or other factors entering into actuarial determinations. It seems reasonable, considering the imperfect knowledge of the real world, to treat corrections of previous long-run over- or under-funding as changes in the price of labor. The problem in data collection is to distinguish expenditure changes for these reasons from those related to the size of annual profits.

It is conceivable that if actuarial assumptions are revised to reflect favorable levels of funding, an employer may be able to improve pension benefits with no additional cost obligations incurred. In this instance, two offsetting developments occur. For ECI purposes there is no net change in the price of labor.

[19] The BLS concept of the price of labor includes current payments for prior service, including those for already retired workers and beneficiaries. These payments can be viewed as part of a predetermined package which could be spent in other ways for the current work force.

[20] The ECI base period is defined as a single payroll period including the 12th of the month. For a given benefit, there may in fact have been no expenditure in that period; however, cost obligations were incurred for work performed and it is those obligations that should be reported. Determination of expenditures over a longer time span provides an expenditure rate independent of the irregularities in the timing of actual employer payments.

Rebates of insurance premiums are ignored. They are treated as windfall gains that do not influence employer pricing and output policies.

[21] Copies of the manual are available, upon request, from the Bureau of Labor Statistics.

the base period is carried forward. Benefit rates are redetermined only when appropriate changes in practices, insurance premium rates, tax rates, etc., are reported. The new rates are calculated in the same manner as for the base period and, when experience factors are used in calculating an expenditure rate, base period experience is used in combination with the revised practice. Periodically, new base period expenditure levels will be calculated and linked to the data projected from the old base.

The effects of changes in benefit practices and other developments within the scope of the ECI change concept are reported when the new cost obligations are first incurred—not, for example, when they are agreed upon in collective bargaining or when actual expenditures are made for a new or revised practice. Consequently redetermined expenditure rates may be estimates of outlays to be made in the future and, hence, not taken from accounting records.

As already observed, the ECI unit of observation is an occupation within an establishment since wage and salary rates are largely related to jobs performed. Data on benefits, unlike wages and salaries, are not always available from employers for each occupation. Employers commonly do not maintain the needed records and, in reality, costs for benefits may not necessarily be occupationally determined. Thus, costs for such benefits as pensions and insurance programs will commonly be collected in plant and office or similar groupings. The groupings may vary among establishments—in accordance with pay setting practices—but must be consistent over time. These cost levels will be used for imputing to occupations benefit expenditures which can be combined with straight-time hourly earnings data. Imputation will reflect whether expenditures for individual benefits are related to levels of wages and salaries. Where benefits are not wage-related, the benefit expenditure rate for the group will be attributed to each occupation within it. On the other hand, where benefits are wage-related, imputation will take into account the relation between group and occupational hourly pay.

A measure of change in total compensation expenditure rates must also take into account the impact of wage-rate changes on the cost of wage-related benefit practices. The Employment Cost Index will account for such "creep" or "roll-up" by redetermining the cost of wage-related benefits each survey period on the basis of regularly collected occupational straight-time hourly earnings.[22]

This approach to benefits yields a measure of change largely independent of shifts in the composition of the workforce. Since it holds calculated benefit expenditure rates constant until identification of specified developments, and then isolates the impact of those occurrences, extraneous factors influencing expenditures are ignored. Therefore, it is more reflective of changes in the price of labor than a simple period-to-period measure of change in average hourly benefit expenditures taken from accounting records.[23]

Nevertheless, these procedures do have their limitations. They are appropriate for developments that can clearly be defined and identified when they occur. This approach cannot, however, readily detect changes in the price of labor which occur gradually and in almost imperceptible amounts, such as vacation cost changes associated with changes in worker seniority.[24] (As already intimated, standardization of the occupational units of observation for measurement purposes does not imply ignoring the effect of changing worker seniority on employer cost obligations.) Additional shifts that influence employer obligations but are difficult to isolate through the data collection techniques adopted include changes in other demographic characteristics of the workforce; alterations in employee selection of benefit options, for example, alternative health insurance plans, and fluctuations in amounts employees set aside for savings and thrift plans calling for matching company contributions.

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[22] Such redetermination will be an automatic computer operation and will not add to data reporting requirements. It should be remembered that changes in the standard workweek and in the amount of paid leave, through their effects on annual working hours, have secondary impacts on compensation per hour worked. These impacts, also, will be taken into account automatically. On the other hand, in keeping with its objectives, the ECI will ignore the effect of fluctuations in hours worked caused by variations in the volume of overtime.

[23] As with the preceding discussion of the distinction between wage rates and hourly earnings, these remarks do not imply a denial of the importance of data on actual hourly employer expenditures for benefits.

[24] To the extent there is a correlation between seniority and proficiency on the job, as already described, this exclusion is not entirely inappropriate.

Conceivably, these occurrences could be studied, but the massive increase in data collection complexity is not deemed to be justified by the relatively limited increase in accuracy. Moreover, any attempt to include the impact of appropriate changes in the demographic characteristics in the occupational workforce would undoubtedly be accompanied by the inclusion of many workforce adjustments the Employment Cost Index seeks to hold constant.

We should also remember that the effects of worker turnover are not all in one direction and, thus, there is some cancellation of positive and negative forces. Moreover, shifts in insurance premium rates and actuarial determinations regarding pension funding, which do influence the Index, may reflect shifts in demographic composition of the workforce. Such shifts also are reflected wherever actual hourly expenditure data are collected and compared over time. In addition, inclusion of the effect of creep allows for an impact on wage-related benefit pricing of all forces affecting occupational hourly earnings, including employee turnover and merit and length of service pay increases.

On balance, the ECI benefit techniques seem capable of providing a reasonably close approximation of the desired series. They do, however, depart from the normal BLS approach to data collection—reliance on payroll or strict after-the-fact accounting records. Nevertheless, the Bureau believes that they can be successfully implemented. These techniques are used extensively by employers, unions, and the Bureau itself in pricing collective bargaining settlements. In addition, the approach to pricing changes in individual benefit provisions was incorporated in Pay Board reporting forms during the Economic Stabilization Period.

Sample Design and Index Construction

At present, the Employment Cost Index is limited to changes in wage and salary rates in the private nonfarm economy, excluding households, and the following discussion is largely concerned with this sector.[25] (As indicated below, publication of measures of change in total compensation in this portion of the economy is scheduled to begin in about a year.) Pay data are obtained on a continuing basis from a probability sample of both establishments and occupations. The approximately 2,000 establishments in the study have been selected to represent the complete range within its scope. The survey design calls for obtaining earnings data for from 1 to 23 occupations per establishment; the average is 10.

Ability to produce meaningful data from a sample of this size is related to the two-phase sampling procedure which has been employed.[26] The 2,000 establishments and the occupations within them were selected on the basis of a 1974 survey of 10,000 establishments in which employment information was obtained for 23 of the 441 three-digit occupations in the census classification system.[27] Separate occupational samples were selected within each of the 62 (essentially 2-digit) SIC industry groups studied. Within each of these 62 industry groups, 5 certainty occupations were selected on the basis of their numerical size in the 1970 Census of Population and 18 others (2 per occupational group [28]) were selected by probability means.

The occupational employment counts obtained in the 1974 survey were used in simultaneously selecting, through a probability-proportional-to-size (PPS) procedure, a final sample of establishments (from the 10,000 studied) and occupations from which earnings data are obtained. As a result, the occupations surveyed differ, not only from industry to industry, but also from establishment to establishment within an industry. The two-stage sampling process was designed to provide an appropriate balance of reporting across industry and occupational lines and to lessen the possibility that establishments contacted would report no workers in an occupation sampled. Refreshment of the sample for pay reporting is at times necessary, and new establishments (and occupations from the 23 studied) are selected from the 10,000 sur-

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[25] A more detailed treatment of the ECI sample design and index number computation procedure than is possible here is found in the *BLS Handbook on Methods for Surveys and Studies* (Bulletin 1910, 1976), Chapter 25.

[26] Also, other things being equal, a measure of change in earnings can be obtained with a smaller sample than would be needed for a measure of the level of earnings.

[27] The 10,000 establishments essentially were a probability sample of 200,000 units previously selected for a 1972 Occupational Safety and Health Survey. The latter group was derived from a frame of 3,000,000 reporting units covered by State unemployment insurance programs.

[28] There are 12 occupational groups in the census classification system (listed below in footnote 34). Three are not applicable to the private nonfarm sector, excluding households.

EXHIBIT 2. ILLUSTRATIVE INDEX COMPUTATION

Step 1: Establishment-occupation sample weights are applied to the occupational earnings to obtain weighted average earnings for each occupation in each of the 62 SIC industry cells for the survey periods:

Sample occupation	Straight-time hourly earnings			Sample weight	Computation of weighted average earnings			
	Sept. (1)	Dec. (2)	Mar. (3)	(4)	Sept. (1) × (4)	Dec. (2) × (4)		Mar. (3) × (4)
						(a)	(b)	
Electricians:								
Establishment 1	$5.30	$5.31	$5.40	1.0	$5.30	$5.31	$5.31	$5.40
Establishment 2	5.20	5.22	5.38	2.0	10.40	10.44	10.44	10.76
Establishment 3	5.16	5.18*	**	3.0	15.48	15.54	**	**
Total				6.0	31.18	31.29	15.75	16.16
Weighted average					5.196	5.215	5.250	5.387
Carpenters:								
Establishment 1	4.90	4.90	4.94	1.5	7.35	7.35	7.35	7.41
Establishment 2	4.80	4.86	4.94	2.5	12.00	12.15	12.15	12.35
Establishment 3	4.86	4.89*	**	3.5	17.01	17.12	**	**
Total				7.5	36.36	36.62	18.65	19.76
Weighted average					4.848	4.883	4.875	4.940

NOTE: Asterisk (*) indicates imputed data. Two asterisks indicate that Establishment 3, classified as a temporary nonrespondent in December, is a dropout in March. In (a) imputed data from Establishment 3 are used in calculation; in (b) only data from Establishments 1 and 2 are used.

Step 2: These weighted average earnings are multiplied by base weight period employment from the decennial census to obtain wage bills for each occupation-industry cell for the survey periods:

Sample occupation	Weighted average earnings				Occupational weight—1970 census employment	Wage bills			
	Sept.	Dec.		Mar.		Sept.	Dec.		Mar.
	(1)	(2a)	(2b)	(3),	(4)	(1) × (4)	(2a) × (4)	(2b) × (4)	(3) × (4)
Electricians	$5.196	$5.215	$5.250	$5.387	3,000	$15,588	$15,645	$15,750	$16,161
Carpenters	4.848	4.883	4.875	4.940	2,000	9,696	9,776	9.750	9,880
Total wage bill, craft and kindred workers, Industry 1						25,284	25,421	25,500	26,041

NOTE: Col. (2a) includes imputed figures from Establishment 3 (see step 1); Col. (2b) excludes Establishment 3.

Step 3: The wage bills are summed across all cells to obtain total wage bills for the survey periods:

Industry	Wage bills			
	Sept.	Dec.		Mar.
	(1)	(2a)	(2b)	(3)
1.	$25,284	$25,421	$25,500	$26,041
62.				
Total	285,125	287,345	287,650	291,600

Step 4: The aggregate wage bill for the current survey period is divided by the wage bill for the prior period to obtain ratios:

December = 287,345 ÷ 285,125 = 1.0078
March = 291,600 ÷ 287,650 = 10137

Step 5: The ratios are converted to quarterly percentage changes:

December = 0.78 percent
March = 1.37 percent

Eventually, the ratios will serve as link relatives to move the index from quarter to quarter:

September index = 100.00
December index = 100.00 × 1.0078 = 100.78
March index = 100.78 × 1.0137 = 102.16

veyed in 1974. A plan for sample rotation—possibly on a 3- to 5-year cycle—is under development.[29]

In each survey period, within a given 2-digit industry group, average straight-time hourly earnings data collected from reporting establishments are averaged by occupation. In computing these occupational averages, data provided by individual establishments are weighted. The weights—held constant over time—were derived from the 1974 occupational employment survey results. These average earnings in occupation-industry cells in turn are weighted (that is, multiplied) by 1970 census employment for the cells to provide wage bills.[30] Summation of wage bills across all cells yields the total wage bill for the survey period. Comparison of wage bills for successive periods yields percentage changes which, as link relatives, can move an index from one period to the next. This procedure is illustrated in Exhibit 2, which also shows techniques used to handle temporary nonrespondents and dropouts from the survey.

It is to be observed that the procedures described yield a base weighted (Laspeyres) index. At present, pending the introduction of benefit data, only percentage changes are reported. These, however, can easily be converted to index numbers, as shown in Exhibit 2. Although the example given applies to wages and salaries, the procedures are applicable also to total compensation. It is necessary only to add hourly benefit expenditures to hourly earnings and use the sum in the computations, instead of hourly earnings.

Uses and Limitations

A meaningful statistical series can be developed only if the perceived needs of data users are kept clearly in mind. The Employment Cost Index has been designed to measure changes in the basic transactions price in the labor market, defined in a manner appropriate to economic analyses of changes in compensation, employment, productivity, and prices. Although this specific need guided the development of the Index, its conceptual framework is appropriate for a variety of other uses. Together with associated subindexes, the new series should also be valuable in studies of labor market behavior such as investigations of labor mobility and may aid in reviewing pay trends in individual wage-determination units.

Nevertheless, it is impossible to know beforehand all the specific uses to which a new statistical measure will be put. Supply has a way of creating demand. Although analytical potentials must be emphasized in the development of a series, the ultimate uses will be determined by emerging needs and by the resourcefulness of the users, as well as by the special characteristics of the new measure. We cannot anticipate, except in a general way, what these needs will be or the ingenuity of analysts; we can, however, point out the potential provided by the Index's characteristics.

The Employment Cost Index will be a relatively pure measure of compensation-rate change suitable for use in analyzing the relations between movements in the price of labor and changes in the economic climate. When the series is finally developed there will be available for the first time a comprehensive and timely measure of changes in compensation, capable of internal analyses and free of much of the influence of employment shifts. The Employment Act of 1946 committed the Federal Government to a policy of establishing and maintaining a high level of production and employment. Government policymakers require timely and comprehensive data on economic activity to carry out this responsibility. Such data are not available on employment, prices, and production; the Employment Cost Index will provide similar data on compensation.

The new Index may also replace existing wage series in many econometric models. Existing measures are not as complete, timely, or accurate as the Employment Cost Index, and they may be conceptually inappropriate. Approximations of the new series are already being used in some models with significant improvements in the results.[31] To the extent that the relationships

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[29] All told, about 250 occupations were studied in the 1974 survey. About 1,000 of the sample establishments had been surveyed in 1971 in the Bureau's Occupational Employment Survey. These units were not surveyed again and the already available occupational employment information was used for them.

[30] Weights will be revised after results of the 1980 census become available.

[31] See Otto Eckstein and Roger Brinner, *The Inflation Process in the United States*, prepared for the use of the Joint Economic Committee, Congress of the United States, 92d Congress, 2d Session (Washington, U.S. Government Printing Office, 1972), pp. 7-8.

among pay changes and other economic variables are better explained by the new Index, it will replace existing measures thereby improving our understanding of the way economic variables interact.

The Index may also be used as background information in formulating wage decisions (in collective bargaining and elsewhere), in developing national manpower policies, in company planning (such as where to locate or expand operations [32]), and in other circumstances where less satisfactory measures are now employed. Employment cost subindexes for industrial, regional, and occupational groupings will be especially valuable for such uses. Of course, unforeseen uses will doubtless develop.

Experience with other measures is suggestive. For example, indexes are often used as escalators—the CPI is used to escalate wages, rents, and pensions, and other indexes to escalate costs, particularly in long-term contracts. Indexes are also used to move or update measures for which timely data are not available. Because of the time lag between data collections, for example, data from the BLS Industry Wage Surveys are not always current; certain types of wage data might be updated with the Employment Cost Index.

The Employment Cost Index has been designed to permit analysis of its data in conjunction with the results of BLS occupational wage surveys to illumine relationships between developments at the micro and macro levels. Such examinations are important to the study of compensation both in individual labor markets and at the overall level. In this regard, the new Index should be seen not as an independent addition to an already extensive body of existing information on compensation, but rather as the keystone to a comprehensive and integrated structure of occupational wage data.[33]

The new Index should not, however, be regarded as an all-purpose tool. As a close approximation of changes in the price of a standard unit of labor services, it does not directly measure changes in working income or wage and salary flows in the economy. For such purposes, existing measures such as average weekly and hourly earnings, which are affected by fluctuations in the workweek, premium-paid hours, and employment shifts, are clearly appropriate.

The Employment Cost Index will not measure levels of compensation. Although computed from data on pay levels, the statistical design yields meaningful information only on changes in compensation. This is true because of the limited size of the sample and, also, the use of fixed employment weights in averaging pay data. Furthermore, the ECI does not cover the total cost of employing labor. Hiring and training costs and retroactive payments, among others, are excluded; the Index also controls for the types and amounts of labor inputs, which naturally affect total employment costs. Finally, the Index by itself would be an unsatisfactory measure of worker well-being, since it does not take account of changes in the price level and employment conditions. In addition, as already described, the Index considers compensation from a cost-of-production standpoint; a measure of worker well-being should define compensation in terms of worker receipts.

Mention has been made of the possibility of extrapolating existing series by use of the Employment Cost Index. Such action would be appropriate for updating data on rates of pay, but not for data on money flows. An earnings series would be a more satisfactory mover of data on income levels. Moreover, great care and analysis must be exercised before assuming that ECI changes are roughly synonomous with wage rate changes in narrowly defined occupations or situations.

Publication Plans

The publication goal for the Employment Cost Index is to produce a monthly series, covering changes in total compensation throughout the civilian economy, with data released 2 months after the reference payroll period. This goal will be reached in stages. Data were first released in June 1976, and covered percent changes in wage and salary rates from September to December 1975 and from December 1975 to March 1976. These data were limited to the private nonfarm sector, excluding households. Collection of fringe benefit expenditure data in the same industrial sector was recently begun, and publication of quarterly data on changes in total com-

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[32] As indicated below, geographic subindexes are limited to broad regions.

[33] As noted above, the Employment Cost Index approach has been adopted in the computation of area wage survey measures of change. (See footnote 9.)

pensation is tentatively scheduled to begin in about a year. In subsequent years, the Index will be expanded to cover the total civilian economy on a monthly basis.[34]

In addition to an overall measure of wage and salary change, the Bureau now releases data for eight major occupational groups, 5 major industry divisions, and 4 geographic regions. In addition, separate measures are produced for union and nonunion occupations and for metropolitan and nonmetropolitan areas. Additional detail will be provided as the sample size increases.[35] After the necessary information is collected, separate indexes will be provided for total compensation and straight-time earnings. Cross classifications, at most, will be limited.

Publication of subindexes reflects the complex wage structure and wage-determination mechanisms in the economy. The subindexes help to explain the behavior of the overall measure and, in addition, provide information on important individual sectors of the economy. Moreover, they are valuable in a variety of analyses such as those concerning the transmission of wage influences from one labor market to another and the role of wages in allocating labor.

Nevertheless, even the subindexes are the result of aggregating individual observations. For some purposes, variations among reporting units are important. Measures of such variation are under consideration.

ECI data are initially published in press releases, which are then reprinted in the Bureau's monthly periodical, *Current Wage Developments.* As appropriate, analytical articles, measures of statistical reliability, and data on the relative importance of Index components will be prepared and published in *Current Wage Developments* and the *Monthly Labor Review.* In addition, the Bureau plans to publish a handbook on ECI methodology, giving detailed coverage to topics treated here only briefly.

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[34] Data from Alaska and Hawaii currently are excluded, but will be added later.

[35] The planned subindexes include, for major industry divisions, agriculture, forestry, and fisheries; mining; contract construction; manufacturing; transportation, communication, electric, gas, and sanitary services; wholesale and retail trade; finance, insurance, and real estate; services; and public administration. For major occupational groups, the subindexes will be professional, technical, and kindred workers; farmers and farm managers; managers and administrators, except farm; salesworkers, clerical and kindred workers; craft and kindred workers; operatives, except transportation; transportation equipment operatives; laborers, except farm; service workers, except private household; farm laborers and foremen; and private household workers. The geographic subindexes will be New England, Middle Atlantic, East North Central, West North Central, South Atlantic, East South Central, West South Central, Mountain, and Pacific.

Confidentiality of Statistical and Research Data

EDITOR'S NOTE

In previous issues of *Statistical Reporter* there have been several discussions of the planning process associated with preparing *A Framework for Planning U.S. Federal Statistics, 1978–1989*. The text of the Framework is in the process of being reviewed and revised by the Federal statistical agencies. A revised draft will be the subject of public review and comment during 1977.

Selected drafts of various sections of the Framework will appear in *Statistical Reporter* during the coming months. While preliminary in nature, these drafts will be published in order to facilitate wide review of these materials. The chapter on Confidentiality of Statistical and Research Data, which is a crosscutting issue of Section IV of the Framework, is published in this issue. The following chapters have appeared in previous issues last year: User Access-Data Banks (December); Federal-State Cooperative Systems of Data Collection (November); Long-Term Economic Growth Models (October); Section I—The Nature of the Plan (September). For a full outline of the overall Framework, see pages 207 and 208 of *Statistical Reporter* for May 1976.

For background statements on the planning process, see Joseph W. Duncan, "Developing Better Long Range Plans for Federal Statistics," *Statistical Reporters*, No. 75–4, October 1974; Robert W. Raynsford, "The Interagency Statistical Planning Effort, 1975," *Statistical Reporter*, No. 76–3, September, 1975; Paul O'Neill, "OMB's Role in Planning and Coordination of Federal Statistics," *Statistical Reporter*, No. 76–11, May 1976.

Comments on these materials should be sent to the Statistical Policy Division, Office of Management and Budget, 726 Jackson Place, N.W., Washington, D.C. 20503.

Introduction and Overview

The concern for the protection of privacy of individuals and for maintaining secret proprietary information pertaining to business establishments and other legal institutions is traditional and well known.

The recent debates in Congress leading to the passage of the Privacy Act of 1974 and the voluminous literature on the subject identify the Federal Government as a major threat to that privacy. Indeed, the Government's need for information for policy determination, program evaluation, and regulation of many aspects of society has led to an increasing need for information and, therefore, increasing conflicts with the concepts of privacy, both for individuals and legal persons. It has also focused more attention on the concept of confidentiality of information than ever before.

It is important that the two concepts of privacy and confidentiality be distinguished at the outset. Privacy, on the one hand, has been variously defined as: (1) the right to be left alone, to be spared from unauthorized oversight and observation, and from searching inquiries about oneself and one's business [1]; (2) the ability to control the use of information about oneself, whether to give it free circulation, limited circulation, or no circulation at all [2]; and (3) the right to participate in a meaningful way in decisions about what information will be collected and how that information will be used.[3] The concept of autonomy is also used to describe this right. In one view, these definitions imply that a data subject must be fully informed about all uses of data sought and be given the right to withhold consent from any or all such uses. In the extreme, of course, the Government should not collect any information at all.

Confidentiality, on the other hand, involves the conditions of use and disclosure of data once it is collected. The Government's needs for information about individuals, businesses, and institutions fall into many different categories in-

[1] *Webster's Third New International Dictionary.*

[2] Alan F. Westin, *Privacy and Freedom* (New York: Atheneum, 1967). Part One.

[3] DHEW Secretary's Advisory Committee on Automated Personal Data Systems, *Records, Computers and the Rights of Citizens* (DHEW Publication No. (OS) 73-94, July 1973), p. 41.

cluding the population count mandated in the Constitution; providing benefits such as welfare, student loans, or medical insurance; collecting taxes; regulating industry; enforcing laws; evaluating programs; or advancing the state of knowledge through statistics and research. Hence, the Government collects or causes to be collected great amounts of data, some of it highly personal or capable of inflicting great competitive injury if made public. The challenge posed by the dual concerns for privacy and the enhancement of knowledge, is, therefore, to refrain from collecting unnecessary information and to maintain the necessary degree of confidentiality for that which is collected.

In addition, in many cases the success of a statistical inquiry leading to an enhancement of knowledge relies on a pledge of confidential treatment of the data. Margaret Martin has succinctly stated this proposition as follows:

> "Even when responses to requests for information are required by law, the success of a statistical program depends in large measure on the willing cooperation of respondents. Respondents who understand the purpose of the inquiry, who sympathize with the intended use of the information, and who believe that providing the government with the requested information will not harm them are much more likely to answer truthfully and with a minimum of effort on the part of the data collection agency. One element in enlisting such cooperation is the assurance of harmlessness to the respondent, and one of the most common methods for making such assurance in statistical data collection is the provision for keeping the replies confidential." [4]

Several strains of legal, public policy, and ethical thought converge on these government-collected data which understandably lead to conflicts which have yet to be resolved adequately. These include: (1) the desire to protect individual and corporate privacy as defined above; (2) the desire to protect data subjects from the various risks associated with disclosure of identifiable information, once collected; (3) the need to facilitate and search for truth through research and evaluation; and (4) the need for the public to understand how government decisions are made as evidenced by the Freedom of Information Act (FOIA) and the Government in the Sunshine Act (Sunshine Act).

Definition of Statistical and Research Data

For the purposes of this chapter, the scope of data under discussion must be identified. The definition of statistical and research data is elusive at best; such data cannot be defined by the character of the information, but rather by the use to which the information is put. These activities include gathering data for the purpose of estimating aggregates or providing cross-tabulations on economic or social characteristics, the generation of microdata sets on anonymous individual units for analysis, and the development of longitudinal reporting panels. Research activities include biomedical research conducted in clinics or hospitals, socioeconomic experimentation, and evaluation studies of the effect of different approaches to providing government services. One common thread of these activities is the advancement of knowledge, whether it be of a general nature or related to a specific problem or Federal program.

Statistical and research activities are frequently carried out with data collected directly from respondents. In many cases, however, data collected originally in connection with the administration of Federal programs such as work training programs or the collection of social security taxes may be essential to a statistical or research program. Medical treatment records are often used. The quality which separates these administrative activities from those statistical and research activities under consideration in this chapter is how the data are used. Administrative activities use information for determining the eligibility for benefits or for investigation or regulation of particular individuals or legal entities; such information is "micro-action" in nature.[5] In contrast, statistical and research activities are defined as those activities whose sole purpose is advancement of the state of our knowledge, but they do not include the use of data in identifiable form to make determinations about particular individuals. This definition is similar to the definition of statistical research and reporting records in the Privacy Act.

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[4] Margaret Martin, "Statistical Legislation and Confidentiality Issues," *International Statistical Review* (Vol. 42, No. 3 (December 1974), p. 265.

[5] Walt Simmons, "Issues Regarding Confidentiality of Data in the Cooperative Health Statistics System," *Proceedings of the Workshop on Privacy and Confidentiality* (Cooperative Health Statistics System, National Center for Health Statistics, March 1976), pp. 95–101.

Principles of Confidentiality

The protection of confidentiality for statistical and research data involves several basic ingredients:

—The prohibition of mandatory disclosure of identifiable data pursuant to a subpoena or other compulsory legal process or under the provisions of the Freedom of Information Act;
—The prohibition of other disclosures to the public of identifiable data in publication or otherwise by an agency; and
—The prohibition of use of identifiable data for any purpose other than one which is purely statistical or research in nature, and, particularly, from a use in identifiable form which would adversely affect any particular respondent's rights, benefits, or privileges.

Prohibition of Mandatory Disclosure.—Compulsory legal process has been invoked in only a few cases dealing with statistical and research data. One of the most famous of these was the 1961 order requiring the St. Regis Paper Company to deliver a copy of the Census Bureau form which it had retained in its files to the Federal Trade Commission. In a swift reaction, Congress amended the Census law to protect copies of Census documents retained in respondent's files from compulsory legal process.

In a case involving an income maintenance experiment in New Jersey, files of some families were sought by a county prosecutor to attempt to discover if the families were defrauding the county welfare department by not reporting income received from the experiment. The records were not protected by statute from subpoena, and the case was eventually settled only after the researcher came close to going to jail for contempt of court.

In another instance, *People v. Newman,* a subpoena was issued for photographs of participants in a New York methadone maintenance program. After many months and the threat of contempt of court against the researcher, the clinic administering the program, on appeal, was allowed to withhold the photographs on the grounds that the identity of the patients was protected by the research privilege which was granted to the program under the Public Health Service Act.

The FOIA provides that persons may require disclosure of agency documents except that an agency may withhold documents which fall within certain exemptions. These exemptions include, among others, matters which are "specifically exempted from disclosure by statute;" "trade secrets and commercial or financial information obtained from a person and privileged or confidential;" and "personnel and medical files and similar files the disclosure of which would constitute a clearly unwarranted invasion of personal privacy." Recently, in interpreting the last exemption, courts have tended to consider whether the need for the data, as balanced against the extent of the invasion of personal privacy, warrants the particular disclosure. It is clear that a pledge of confidentiality made to a respondent is not sufficient, in and of itself, to protect data not expressly exempted from disclosure by another statute. The FOIA has not been used very often to force disclosure of statistical or research data in identifiable form, and those few disclosures have mainly involved corporate data. Disclosure of identifiable data may prove to be a greater problem in the future due to the recently passed FOIA amendments which will speed up agency processing requests for information and the Sunshine Act which substantially limits the applicability of the statutory exemption from FOIA disclosure.

It is argued in this chapter that identifiable data used for statistical or research purposes should be specifically exempt from disclosure by statute to protect the identity of respondents and to assure accurate statistical and research results. The DHEW Secretary's Advisory Committee on Automated Personal Data Systems cautioned that "the data to be protected should be limited to those used exclusively for statistical reporting or research. Thus, the protection would apply to statistical reporting and research data derived from administrative records, and kept apart from them, but not to the administrative records themselves." [6]

Prohibition of Voluntary Disclosure.—Protection of data from voluntary disclosure in identifiable form is an elementary aspect of any statistical or research activity in which identifiable data are used. Several steps may be appropriate to achieve this protection. Agency personnel should take an oath to protect the identity of respondents. Criminal penalties should be assessed for knowing

[6] DHEW Secretary's Advisory Committee, *op. cit.*, p. 103.

and willful disclosure. Civil remedies might be made available to any respondent who is harmed by the disclosure. Research data should be scrubbed of identifiers as soon as possible to prevent disclosure, and all agencies should be sensitive to the possiblity of disclosing data through publications. (The Census Bureau, in particular, has developed disclosure analysis so that data pertaining to a particular respondent cannot be discovered even by comparison of several tables.)

The integrity of the statistical and research activities of the government might be seriously damaged by inappropriate disclosure. An Interagency Committee on Statistical Methodology chaired by the Office of Management and Budget is exploring disclosure avoidance techniques in publications, and in the dissemination of public use microdata tapes, as well as statistical matching with and without using identifiable data. In the words of the DHEW Secretary's Advisory Committee: "The protection should be limited to data identifiable with, or traceable to, specific individuals. When data are released in statistical form, reasonable precautions to protect against 'statistical disclosure' should be considered to fulfill the obligations not to disclose data that can be traced to specific individuals." [7]

Prohibition of Misuse.—The final element in a program to protect the confidentiality of statistical or research data is to prevent their use in identifiable form for making determinations which affect a particular respondent. Agencies often promise that data pertaining to a respondent will be used only for statistical or research purposes, but some agencies do not have a legal basis to back up this pledge.

It is important to consider the organizational factor in protecting these data from misuse. Several agencies of the Federal Government perform only statistical or research functions, and their product takes the form of published aggregates, tabulations, research reports, and other documents which do not reveal identifiable statistical data or the identity of any research subject. Any agency which has this limited function can more easily assure the confidentiality of data collected or received from another agency under a specific law which protects all such data which it collects or maintains.

When statistical or research activities are undertaken by agencies which have other program responsibilities, it is often more difficult to keep the data from being used in the administration of a program. (Some agencies use the word "confidential" to include data used internally for regulatory purposes—such data should be described with another word to avoid confusion with the useage proposed in this chapter.) This may be especially difficult when the data are originally gathered in connection with regulatory and program administration functions. Often such data are collected on a mandatory basis to determine eligibility for a benefit or to see whether a particular person has complied with a law. As mentioned above, program-related information may also be useful for statistical, research, or program evaluation activities. These activities may involve the collection of additional statistical data, perhaps from a sample of program participants. In these cases, the statistical data derived from the program may be inextricably merged with other directly collected data in the records maintained by the researcher, evaluator, or statistician. A major threat to the confidentiality of the data is that data which are maintained for statistical or research purposes may be viewed as a prime source of information by a benefits program administrator or by a regulatory arm of an agency.

It is clear that the integrity of statistical or research programs of the Federal Government would be widely questioned and their effectiveness would be damaged if data from those programs were used in identifiable form to make administrative or regulatory decisions about particular respondents. Hence it is important to keep identifiable statistical or research data separate from program administration or regulatory data, even if the former is derived from the latter. A good way to achieve this separation is to establish organizational integrity for statistical or research activities if possible, by establishing a separate agency or unit within an agency which is legally insulated from requests for identifiable data from other operating units or agencies. At least, where statistical or research data are derived in whole or in part from administrative data they should be maintained apart from the original administrative data sets to reduce the possibility of their use in the administrative process. In some cases the inability of a substantive program administrator to have access to identifiable statistical or research data may lead to a duplicate data collection effort. This is the

[7] *Ibid.*

price one must pay to achieve tight confidentiality for statistical or research data.

Sharing of Identifiable Data Under Controlled Conditions

One of the most difficult questions facing the Federal Government is whether there are any circumstances under which identifiable statistical or research data should be disclosed to another person or agency not connected with the original data collection process. There are strong arguments that this should be done only after securing the respondent's informed consent for each such release of identifiable data to a particular recipient for a particular stated purpose, whether that consent is given when the data are originally collected or at a later stage, but in any event before the disclosure is made. These arguments rest on to the definitions of privacy cited above and seek to protect the data subject's autonomy. This is the approach taken by the DHEW Secretary's Advisory Committee:

> "[The agency should] assure that no use of individually identifiable data is made that is not within the stated purposes of the system as reasonably understood by the individual, unless the informed consent of the individual has been explicitly obtained." [8]

While the Privacy Act of 1974 starts with this basic principle, the many exceptions to informed consent incorporated in that Act seriously erode the concept. The Census Bureau law, however, is even tighter than this, since it does not permit the release of identifiable data, even with consent, except to Bureau employees or to other sworn agents.[9]

A different approach is recommended in this chapter. There are some situations in which the disclosure of identifiable statistical or research information is a good public policy and may be an integral factor in advancing the state of knowledge by contributing to the success of other similar programs. Situations leading to sharing of such identifiable data among agencies include the development of statistical samples which would only be available from other agencies' data, and the matching of data from two or more sources to develop a richer data base for statistical cross-tabulations, to check the accuracy of a data source, retrospective studies, to analyze large bodies of data from another agency, and to ensure accuracy, timeliness, and consistency of major statistical or research reports. This is the basic philosophy embodied in the Federal Reports Act of 1942. In most cases the sharing of data results in a reduction of burden on respondents and cost to the taxpayers of performing a particular study. This philosophy is also embodied in the Federal Reports Act. In some cases a study literally could not be performed at all without access to another agency's identifiable data.

The proposition that confidentiality can be protected by entirely prohibiting interagency transfers of identifiable data without consent would eliminate many valuable studies.[10] Often the securing of informed consent prior to disclosure is impossible. In some cases, this is because of the large scale of the source program. In other cases, it is feared that those who consent would be a self selected and therefore biased sample of respondents. Finally, securing informed consent after the data collection is known to be a very difficult and expensive process.

It should be clearly stated that the extent of necessary sharing of identifiable statistical or research data is not great. Matching of individual social security records with Census records is one example. The proposed interagency use of the Census Bureau's standard statistical establishment list of enterprises and establishments is another. There are instances in which nonidentifiable data or statistical matching techniques could be used in lieu of transfer of identifiable data with, of course, some loss of accuracy or expense in performing the match.

Most instances of transfers of identifiable records to other agencies or to private researchers or contractors involve program administration data which are found useful for statistical or research purposes. Thus, Census has put tax records on individuals and businesses to good use without harming the taxpayers. Drug abuse research has been conducted using military discharge records without a hint of trouble. Epidemiological research uses identifiable hospi-

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[8] *Ibid.*, p. 101.

[9] Census can release identifiable data to an individual who supplied it or to their heirs, largely for the purpose of verifying age to establish eligibility for a benefit (13 U.S.C. 8).

[10] For an excellent statement of this proposition, see DHEW "Confidentiality of Alcohol and Drug Abuse Patient Records," *Federal Register*, Vol. 40, No. 127, Part IV (July 1, 1975), pp. 20536–20537.

tal records. While these source data may be sensitive or commercially valuable, they were not in the first instance statistical or research records.

The challenge is to determine under what circumstances and conditions should identifiable statistical or research records be disclosed to other than the collecting agency.

To answer this challenge one must be clear about what is to be protected and at what cost that protection is being secured. On the one hand, one could protect the autonomy of a data subject, to the extent that laws and regulations can be effective in this regard, by requiring advance informed consent for each such disclosure. The cost of that approach, however, is great, leading to biased data, increased public expenditure, and the absolute impossibility of some valuable statistical and research studies.

On the other hand, one can concentrate on protecting the data subject, individual or legal person, from risk of adverse exposure or harm by requiring that the recipient of identifiable statistical or research information be subject to the same legal procedural contraints against disclosure or misuse of the data and afforded the same legal protection from compulsory disclosure pursuant to a subpoena or FOIA request as is the agency which originally collected the data. It is this alternative approach which is taken here, in the interest of an effective Federal statistical and research system coupled with adequate protection of the interests of data subjects.

There is, however, a significant difference of opinion as to the best method of setting conditions and constraints on data disclosed with an eye to the two purposes of providing effective protection of data subjects while, at the same time, assuring sufficient flexibility to permit socially useful programs involving identifiable data without unnecessary bureaucratic impediments. Before proposing a possible solution to this problem it is necessary to examine the present legal situation.

Current Laws Affecting Confidentiality — A Partial Summary

Many existing laws address the problem of data confidentiality. This section presents in summary form a catalog of some important examples. It is not intended to be exhaustive, but rather descriptive of those models which are presently in place. Some are general, applying to many or all agencies, some apply only to specific agencies, and a few apply to particular types of information wherever maintained. They are presented in that order.

GENERAL LAWS

General Rule on Disclosure of Confidential Information Applicable to All Agencies.—One law (18 U.S.C. 1905) imposes penalties on, and removal from office of, any Federal official or employee who "publishes, divulges, discloses or makes known in any manner or to any extent not authorized by law . . . confidential statistical data." It provides insufficient protection for statistical or research information, however. For example, many disclosures to others within an agency performing regulatory, investigative, or substantive program administration functions are authorized by law. In addition information which is discoverable in civil suits under Federal Rules of Civil Procedures may not be withheld under this provision. It does not prevent disclosure required or permitted under the Freedom of Information Act. This law does, however, apply to unauthorized disclosures of information, and forms a basic minimum standard to be met. The specific wording of the law is as follows:

> "Whoever, being an officer or employee of the United States or of any department or agency thereof, publishes, divulges, discloses, or makes known in any manner or to any extent not authorized by law any information coming to him in the course of his employment or official duties or by reason of any examination or investigation made by, or return, report or record made to or filed with, such department or agency or officer or employee thereof, which information concerns or relates to the trade secrets, processes, operations, style of work, or apparatus, or to the identity, confidential statistical data, amount or source of any income, profits, losses, or expenditures of any person, firm, partnership, corporation, or association; or permits any income return or copy thereof or any book containing any abstract or particulars thereof to be seen or examined by any person except as provided by law; shall be fined not more than $1,000, or imprisoned not more than one year, or both; and shall be removed from office or employment."

Federal Reports Act.—The Federal statistical system has long been sensitive to the importance

of confidential treatment of statistical information. For example, the Federal Reports Act of 1942 (44 U.S.C. 3501–12) specifically addresses the importance of confidentiality in data sharing for statistical purposes.

The purpose of the Federal Reports Act is to reduce the Federal reporting burden on the public by the elimination of unnecessary duplication of Federal requests for information from the public and by encouraging the coordination of Federal data collection efforts wherever possible. In this connection, the sharing of data between Federal agencies has been viewed as a way to reduce the need for agencies to collect the same information more than once.

The circumstances specified in the Act for sharing of data between agencies are limited, however, since information can only be released to another agency if (a) the information is released in nonidentifiable summary or tabular form; (b) the information has not, at the time of collection, been declared by the collecting agency or a superior authority as being confidential; (c) the respondent has consented to the release; or (d) the recipient agency has a mandatory authority, with criminal penalties for nonresponse, to collect the same data. Under the Act, the Director of the Office of Management and Budget is authorized to require any Federal agency, except the Internal Revenue Service or bank supervisory agencies, to transfer any data which it collects to another agency under these conditions. Some such transfers take place without OMB intervention, however. While the extent of interagency data sharing under this Act is not known, it is probably minimal.

The Freedom of Information Act and the Government in the Sunshine Act.—Statistical agencies concerned with the protection of data must also consider the impact of the Freedom of Information Act (FOIA) (5 U.S.C. 552) and the Government in the Sunshine Act (5 U.S.C. 552b).

The purpose of this Act is basically to permit the public access to information upon request as a check on the process of government. Even within this environment, however, Congress recognized the wisdom of maintaining some information confidentially. For our purposes, the relevant passages, which appear in subsection (b) as amended by the Sunshine Act, permit agencies to withhold matters which are—

> "(3) specifically exempted from disclosure by statute (other than section 552b of this title) provided that such statute (A) requires that the matters be withheld from the public in such a manner as to leave no discretion on the issue, or (B) establishes particular criteria for withholding or refers to particular types of matters to be withheld;
>
> "(4) trade secrets and commercial or financial information obtained from a person and privileged or confidential; . . .
>
> "(6) personnel and medical files and similar files the disclosure of which would constitute a clearly unwarranted invasion of personal privacy."

Exemption (3) recognizes that certain information (for example, Census information collected under Title 13) has received specific Congressional exemption because it is especially sensitive or because confidentiality is required in order to obtain public cooperation. This information may not be released by an agency under FOIA. The revision of this exemption by the two added criteria will affect some agencies, notably the Social Security Administration, which has relied on applying a broad secretarial discretion to identify matters which should be "specifically exempted from disclosure by statute."

Exemption (4) deals primarily with business records. Case law was developed to bring under this exemption that information which would result in significant competitive injury to a company or the disclosure of which would impair the government's ability to obtain the necessary information in the future.

Exemption (6) deals with information about individuals. Recent interpretations differ as to whether, on balance, a significant public use of the information would warrant a significant invasion of personal privacy under the Act.

The Privacy Act of 1974.—Recent attention on the protection of records was broadly codified in the Privacy Act of 1974 (5 U.S.C. 552a).

The Privacy Act requires agencies to: (a) collect only that information necessary to perform agency functions; (b) publish descriptions of existing data systems so the public can learn what records are maintained by the agency; (c) inform individuals at the time of data collection whether the request is mandatory or voluntary, the con-

sequences, if any, of nonresponse, and the uses of the data; (d) permit individuals in most cases to examine records maintained by them and to challenge the accuracy thereof; (e) to insure that the records are sufficiently accurate for agency purposes; and (f) to observe certain minimal standards of disclosure of the records.[11]

The general rule on disclosure of identifiable records about individuals is that the agency must obtain informed consent from the data subject for each such disclosure; however, eleven exemptions to this rule permit disclosure without informed consent. The exemptions include, among other disclosures: (a) to officers of the agency to perform their proper functions; (b) when required by the Freedom of Information Act; (c) as a "routine use" described as a use which is compatible with the purpose for which the information was collected; (d) to law enforcement agencies; (e) to the General Accounting Office and to committees of Congress; (f) pursuant to a court order (subpoena); and (g) to the Census Bureau for statistical purposes. These disclosures without consent are permissive and do not override more restrictive laws forbidding such disclosures.

It is clear that the Privacy Act's provisions with these exemptions do not agree with the principles of confidentiality for statistical and research information. It is not clear, however, whether one effect of the Act will be to stifle those beneficial disclosures which should be permitted. Early indications are that sufficient latitude exists under the Act to permit necessary disclosures.

AGENCY SPECIFIC LAWS

Bureau of the Census.—Nearly all observers of statistical systems use the U.S. Bureau of Census as the outstanding example of confidential treatment of statistical data.

The Census law (13 U.S.C. 9) includes one of the tightest and best known confidentiality provisions in existence. It provides for penalties for inappropriate disclosure of information or use for other than statistical purposes. Following the St. Regis Paper Company case in 1961, in which the Federal Trade Commission succeeded in getting file copies of Census reports directly from the Company by subpoena, Congress amended the law to protect copies of the documents in company or personal files from subpoena. The law states:

> "Sec. 9. Information as confidential: exception
>
> "(a) Neither the Secretary, nor any other officer or employee of the Department of Commerce or bureau or agency thereof, may, except as provided in section 8 [12] of this title—
>
> "(1) use the information furnished under the provisions of this title for any purpose other than the statistical purposes for which it is supplied; or
>
> "(2) make any publication whereby the data furnished by any particular establishment or individual under this title can be identified; or
>
> "(3) permit anyone other than the sworn officers and employees of the Department or bureau or agency thereof to examine the individual reports.
>
> "No department, bureau, agency, officer, or employee of the Government, except the Secretary in carrying out the purposes of this title, shall require, for any reason, copies of census reports which have been retained by any such establishment or individual. Copies of census reports which have been so retained shall be immune from legal process, and shall not, without the consent of the individual or establishment concerned, be admitted as evidence or used for any purpose in any action, suit, or other judicial or administrative proceeding.
>
> "(b) The provisions of subsection (a) of this section relating to the confidential treatment of data for particular individuals and establishments, shall not apply to the census of governments provided for by subchapter III of chapter 5 of this title, nor to interim current data provided for by subchapter IV of chapter 5 of this title as to the subjects

[11] A good summary of the Privacy Act of 1974 is presented by Carole W. Parsons in "The Privacy Act of 1974: New Challenges for Public Administration," prepared for the Annual Meeting of the American Society for Public Administration, April 2, 1975. Ms. Parsons is currently the Executive Director of the Privacy Protection Study Commission which was established by the Act. The Office of Management and Budget has established the "Privacy Act Implementation Guidelines and Responsibilities," *Federal Register*, Vol. 40, No. 132, Part III (July 9, 1975) which provides interpretation of most of the Act's provisions.

[12] See footnote 9 above.

covered by censuses of governments, with respect to any information obtained therefor that is compiled from or customarily provided in, public records."

Today there is general public acceptance and trust of the Bureau of Census as a truly confidential repository of statistical information. Some individuals have charged, however, that the Census statute is too narrow, citing other agencies' inability to have access to the Industrial Directory for statistical sampling purposes and an excessive application of disclosure avoidance relating to tabulations and public use microdata tapes.

Law Enforcement Assistance Administration.—The Crime Control Act of 1973, (section 524(a) of P.L. 93–83), has a provision that statistical and research information collected by the Law Enforcement Assistance Administration (LEAA) may not be used or revealed in identifiable form, even pursuant to subpoena. Such information, as well as file copies, is immune from subpoena. The specific language is:

"Sec. 524. (a) Except as provided by Federal law other than this title, no officer or employee of the Federal Government, nor any recipient of assistance under the provisions of this title shall use or reveal any research or statistical information furnished under this title for any purpose other than the purpose for which it was obtained in accordance with this title. Copies of such information shall be immune from legal process, and shall not, without the consent of the person furnishing such information, be admitted as evidence or used for any purpose in any action, suit, or other judicial or administrative proceedings."

LEAA has recently published regulations entitled, "Confidentiality of Identifiable Research and Statistical Information" (*Federal Register*, Vol. 41, No. 242, Part II, December 15, 1976). The regulations provide that the identifiable information may be used only for a research or statistical purpose which is "to develop, measure, evaluate, or otherwise advance the state of knowledge in a particular area," and specifically not to include "intelligence or other information gathering activities in which information pertaining to specific individuals is obtained for purposes directly related to the enforcement of the criminal laws." They also provide that "copies of research and statistical information identifiable to a private person shall be immune from legal process," although they permit courts to require testimony of researchers from their own memory. The protection extends to information which is directly collected or obtained from any agency or individual.

Research and statistical information may be transferred to any researcher or statistician in identifiable form provided that the recipient signs a transfer agreement with the original data collector that he will use the data only for research or statistical purposes; that it may be further revealed only if it has been included in research findings, such as at conferences and symposia, on a need to know basis for research or statistical purposes, and the participants sign similar agreements; that the physical data will be adequately protected; that the final disposition of the data is known and agreed to by the data collector; and that "the conduct of the recipient's project will not, either directly or indirectly, cause legal, economic, physical or social harm to individuals whose identification is revealed in the transfer of information." It should be noted that such transfers of identifiable data are not restricted to researchers funded by the Government or to projects related to the original purposes of the data collection, and that they are not reviewed by LEAA.

Under the LEAA regulations, data subjects are to be informed of the nature of the project, the data will only be utilized or revealed for statistical or research purposes, and participation is voluntary. Such notification need not be given "where information is obtained through field observation of individual activity or performance and in the judgment of the researcher such notification is impractical or may seriously impede the progress of the research."

Research of the kind funded by LEAA is frequently concerned with illegal or anti-social behavior and, as such, requires data which may be of an extremely sensitive nature. The LEAA regulations represent a balance between protecting the individual from harm while not being unduly restrictive of basic research. Like other similar documents, these regulations have undergone extensive scrutiny both within the Government and by members of the public.

National Center for Health Statistics.—Recently, the Health Statistics and Medical Libraries Act of 1974 (section 308 (d) of P.L. 93–353) specifically

addressed the confidentiality protection of data of the National Center of Health Statistics (NCHS). The confidentiality of the information collected or obtained by NCHS is protected by this Act from use other than that for which it was supplied "unless authorized under regulations of the Secretary" of DHEW. The law is interpreted as providing immunity from subpoena without consent of the data subject. The specific wording is:

> (d) No information obtained in the course of activities undertaken or supported under section 304, 305, 306, or 307 may be used for any purpose other than the purpose for which it was supplied unless authorized under regulations of the Secretary; and (1) in the case of information obtained in the course of health statistical activities under section 304 or 306, such information may not be published or released in other form if the particular establishment or person supplying the information or described in it is identifiable unless such establishment or person has consented (as determined under regulations of the Secretary) to its publication or release in other form, and (2) in the case of information obtained in the course of health services research, evaluations, or demonstrations under section 304 or 305, such information may not be published or released in other form if the person who supplied the information or who is described in it is identifiable unless such person has consented (as determined under regulations of the Secretary) to its publication or release in other form."

There are as yet no proposed regulations under this law.

Bureau of Economic Analysis.—Statistical data collected by the Bureau of Economic Analysis (BEA) in the Department of Commerce is protected by two provisions, section 176a of Title 15, United States Code, and section 286f (c) of Title 22, of the Code.

The former, which is very broad, pertains to "any statistical information furnished in confidence to the Bureau," and provides that it "shall be held to be confidential, and shall be used only for the statistical purposes for which it is supplied." It is interpreted as protecting the individual company data collected by BEA from subpoena. The specific language is:

> "Any statistical information furnished in confidence to the Bureau of Foreign and Domestic Commerce (now covers BEA) by individuals, corporations, and firms shall be held to be confidential, and shall be used only for the statistical purposes for which it is supplied. The Director of the Bureau of Foreign and Domestic Commerce shall not permit anyone other than the sworn employees of the Bureau to examine such individual reports, nor shall he permit any statistics of domestic commerce to be published in such manner as to reveal the identity of the individual, corporation, or firm furnishing such data."

Internal Revenue Service.—While the Internal Revenue Code does not deal expressly with statistics or research, it impinges on statistical activities in an important way and has been the subject of extensive public debate. Section 6103 of the Code, entitled "Publicity of Return and Disclosure of Information as to Persons Filing Income Tax Returns" begins with the statement:

> "Returns made with respect to taxes imposed by chapters 1, 2, 3, and 6 upon which the Secretary (of Treasury) or his delegate shall constitute public records; but, except as hereinafter provided in this section, they shall be open only upon order of the President and under rules and regulations prescribed by the Secretary or his delegate and approved by the President."

In the past several Executive Orders have been issued by the President to permit statistical activities to be performed using tax returns. The Census Bureau and the Bureau of Economic Analysis use such data extensively.[13] The Federal Trade Commission has received statistical samples of corporations for its important Quarterly Financial Report. In 1973, an Executive Order (E.O. 11709) was promulgated to permit the Statistical Reporting Service of the Department of Agriculture to have access to tax returns to develop a master list of farms to serve as a sampling frame for various current agriculture surveys. After a Congressional outcry, largely because of the fear that the information would be misused for the Agriculture Department's

[13] The use by BEA and Census of identifiable tax information on individuals and legal entities are described in the Commerce Department paper entitled "Structuring the Government's Basic Economic Tools," April 1975.

administrative programs and because of the feeling that tax returns of farmers were privileged, the Executive Order was rescinded.[14] USDA is presently authorized to spend over $1 million, with the prospect of a $2.5 million program, to develop a master list from other sources. A significant amount of that money could be saved if the Department had access to tax or census information.

The recent Tax Reform Act of 1976 has amended previously applicable law to prohibit statistical access to tax information by executive order. The Act provides, upon request, information on business returns to Census, the Bureau of Economic Analysis, and the Federal Trade Commission and on individual returns to census, and specifies that such data be used only for authorized statistical purposes and not be disclosed in identifiable form. It has, for example, raised a question as to whether the Social Security Administration will be able to continue the use of IRS address information to assign residence codes in the Continuous Work History Sample. Other agencies not specified here were either denied access in the past or had discontinued their need for access under executive orders prior to the Act's passage.

It is ironic that statistical uses of tax returns should attract such critical attention. Abuses of these data by statisticians are unheard of; the principle abuses which have been discovered have originated through the political process. Some statistical agencies are not in a strong legal position to defend their potential uses of tax returns since they do not have, as do Census and BEA, strong confidentiality laws of their own insulating them from other programs of their Department. Hence, it is difficult to demonstrate to Congress that tax information would be treated according to the principles of confidentiality as set forth in this chapter by many statistical or research agencies. Even years of operating confidential statistical programs under the strictest sets of guidelines with no known abuses is insufficient for this purpose (the Privacy Act of 1974 includes a specific provision for disclosure to Census without consent, but no other agencies are so favored). The first step these agencies should take is to upgrade their statutory confidentiality protection. Perhaps then Congress would be willing to permit access to tax returns for demonstrably beneficial statistical programs.

Social Security Administration.—Another pattern of confidentiality protection is found in section 1106(a) of the Social Security Act, (42 U.S.C. 1306(a)). The section does not deal explicitly with research, but covers any information received by the DHEW in the course of discharging duties under the Social Security Act. The section provides that no disclosure shall be made "except as the Secretary may by regulations prescribe." Thus, an administrative official is authorized to designate classes of information that may be disclosed and those that may not be disclosed, and to determine when and to whom data may be disclosed. In effect, an administrative official has discretion (which must be exercised in advance in published regulations) to respond to legal process or not. Regulations promulgated by DHEW, commonly referred to as "Regulation No. 1" (20 CFR, part 401), specify, for different classes of data, the conditions of disclosure. The Social Security Administration is reviewing its situation in light of the amendment in the Sunshine Act which narrows the scope of administrative discretion which is permissable under the Freedom of Information Act. The law states:

> "Disclosure of Information in Possession of Department
>
> "Sec. 1106.(a) No disclosure of any return or portion of a return (including information returns and other written statements) filed with the Commissioner of Internal Revenue under title VIII of the Social Security Act . . . which has been transmitted to the Secretary of Health, Education, and Welfare by the Commissioner of Internal Revenue, or of any file, record, report, or other paper, or any information, obtained at any time by the Secretary or by any officer or employee of the Department of Health, Education, and Welfare in the course of discharging the duties of the Secretary under this Act, and no disclosure of any such file, record, report, or other paper, or information, obtained at any time by any person

[14] For the congressional descussion of this episode see "Executive Orders 11697 and 11709 Permitting Inspection by the Department of Agriculture of Farmers' Income Tax Returns," Hearings before a Subcommittee on Government Operations, House of Representatives, 93rd Congress, First Session (May 9 and August 3, 1973); and "Information from Farmers' Income Tax Returns and Invasion of Privacy," Sixth Report by the Committee on Government Operations, 93rd Congress, 1st Session, House Report 93–598 (October 18, 1973).

from the Secretary or from any officer or employee of the Department of Health, Education, and Welfare, shall be made except as the Secretary may by regulations prescribe and except as provided in part D of title IV of this Act. Any person who shall violate any provision of this section shall be deemed guilty of a misdemeanor and, upon conviction thereof, shall be punished by a fine not exceeding $1,000, or by imprisonment not exceeding one year, or both."

Bureau of Mines.—While the Bureau of Mines in the Department of the Interior has no specific confidentiality legislation as such, it has recently issued an opinion on the applicability of the Freedom of Information Act which could have broad and far-reaching implications. In a news release, dated December 9, 1976, the Bureau "reaffirmed its policy of not releasing information it receives in confidence, although it pointed out that, under the Freedom of Information Act, the Bureau can give no blanket guarantee of confidentiality." The release cited an announcement in the November 30, 1976, *Federal Register* which said in part that "a determination as to whether specific material falls within (the section (b) (4)) exempted category (of disclosure) must be anew each time that information is requested by a third party under the FOIA. That is because the 'privileged or confidential' status of a piece of information may change with time and changing circumstances." The notice continues to state that, if the information may be withheld under FOIA, it is the Bureau's policy to do so since "to give it out would endanger the Bureau's access to information volunteered by private industry, although it is conceivable that other considerations might be judged more important in a given case."

With this announcement, the Bureau of Mines is stating that, under changing circumstances, the FOIA may require release of some data thought previously to be "trade secrets and commercial or financial information obtained from a person and privileged or confidential." Even data which may be withheld as such might, in extreme cases, be disclosed in the public interest. It is conceivable that some potential respondents may refuse to cooperate with the Bureau of Mines surveys based on such an interpretation of the applicable law. Some respondents may refuse information simply out of confusion about any future interpretation of the FOIA. It is important, however, for the Bureau to continue to evaluate the response rates on its voluntary surveys to determine whether the statement, which will be mailed to all respondents, has any actual effect. The difficulties which the Interior lawyers apparently face in applying FOIA could and should be overcome with the drafting of a strong confidentiality statute, as proposed below, to apply to the Bureau's statistical data.

LAWS DEALING WITH SPECIFIC SUBJECT MATTER

Research Privilege.—The Secretary of the Department of Health, Education, and Welfare and the Attorney General have been given specific authority to assure protection of data collected in the conduct of research on health, drugs, criminal justice, and related matters. These research privilege provisions are found in the Public Health Service Act (42 U.S.C. 24a (a)) commonly referred to as Section 303(a) of the Public Health Services Act, and the Controlled Substances Act (21 U.S.C. 872 (c)) commonly referred to as Section 502 (c) of the Controlled Substances Act.

These Acts confer on the Secretary of DHEW and on the Attorney General the power to authorize researchers to withhold from all persons not connected with the research, the names and other identifying information concerning individuals who are the subject of research. Persons who obtain this research privilege may not be "compelled in any Federal, State, or local civil, criminal, administrative, legislative or other proceeding to identify" the subjects of research for which the privilege was obtained. This authority is discretionary and must be exercised specifically by the Secretary or Attorney General before it may be applied.

This is the provision which finally protected the photographs and other research data in the recent New York methadone maintenance case, *People v. Newman,* but only after serious threats of imprisonment of the researcher.

Alcohol and Drug Abuse Laws.—The Public Health Service collects data associated with research into the causes and treatment of abuse of alcohol and drugs. This is one of the most sensitive of all areas, since it deals with quite embarrassing and even illegal acts. In addition to the research privilege laws cited above, two recent and nearly identical laws deal with this subject.

They are the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment, and Rehabilitation Act of 1970 (42 U.S.C. 4582), as amended by section 122 (a) of P.L. 93–282, the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment, and Rehabilitation Act Amendments of 1974 (88 Stat. 131), and the Drug Abuse Office and Treatment Act of 1972 (21 U.S.C. 1175), as amended by section 303 of P.L. 93–282 (88 Stat. 137). The purpose of these laws and the regulations issued thereunder is to strike a balance between two conflicting goals: (1) to facilitate the research for truth through research, scientific investigation, or evaluation on the one hand, and (2) to safeguard the personal privacy of the individuals who are the intended beneficiaries of the program under investigation on the other hand.

The regulations (*Federal Register,* Vol. 40, No. 127, July 1, 1975, Part IV) provide for access to program data, for research and evaluation without securing the patient's consent, but only under controlled conditions designed to protect the data from misuse and disclosure. They also contain a good discussion of the right to privacy, confidentiality and, the conceptual basis for requiring informed consent for certain disclosures.

The Acts provide that original program records may be subpoenaed—but only after the courts have evaluated the need for the disclosure against the potential injury to the patient, the physician-patient relationship, and the effectiveness of the treatment services. Secondary users of identifiable records, including researchers and evaluators, may not be required to disclose the identity of patients even under subpoena.

The important parts of the laws for this chapter state that:

> "(a) records of the identity, diagnosis, prognosis or treatment of any patient which are maintained in connection with the performance of any drug abuse prevention function (alcoholism or alcohol abuse education, training, treatment, rehabilitation, or research) which is conducted, regulated, or directly or indirectly assisted by any department or agency of the United States shall, except as provided in subsection (c), be confidential, and be disclosed only for the purposes and under the circumstances expressly authorized under subsection (b) of this section.
>
> "(b) (1) the content of any record referred to in subsection (a) may be disclosed in accordance with the prior written consent of the patient. . . .
>
> "(2) whether or not the patient . . . gives his written consent, the consent of such a record may be disclosed as follows:
>
> "A. To medical personnel to the extent necessary to meet a *bona fide* medical emergency;
>
> "B. To qualified personnel for the purpose of conducting scientific research, management audits, financial audits, or program evaluation, but such personnel may not identify, directly or indirectly, any report of such research, audit, or evaluation, or otherwise disclose patient identities, in any manner.
>
> "C. If authorized by an appropriate order of a court of competent jurisdiction. . . . In assessing good cause the court shall weigh the public interest and the need for disclosure against the injury to the patient, to the physician-patient relationship, and to the treatment services. . . . The court shall impose appropriate safeguards against unauthorized disclosure. Except as authorized by court order . . . no record may be used to initiate or substantiate any criminal charges against a patient or to conduct any investigation of a patient.
>
> "(c) except as authorized by a court order granted under subsection (b) (2) (C) of this section, no record referred to in subsection (a) may be used to initiate or substantiate any criminal charges against a patient or to conduct any investigation of a patient."

Protection of Identity of Human Subjects.—The Public Health Service Act (44 U.S.C. 242 a(a)) as amended by Public Law 93–282 empowers the Secretary of DHEW to confer on any person engaged in research on mental health, including research on the use of alcohol and other psychoactive drugs, the right to withhold from any person not connected with the research the

name and other identifying characteristics of the research subjects. Proposed regulations (*Federal Register*, Volume 40, No. 234, December 4, 1975) under the Act specify the type of application which must be made to secure this grant of immunity. The Act provides protection from subpoena or other compulsory legal process in any Federal, State or local civil, criminal, or administrative proceding. The researchher is not authorized to withhold identifying information (a) where the research subject consents to the disclosure in writing, (b) where the medical welfare of a subject would be threatened by failure to review the information, or (c) where required by the Federal Food, Drug, and Cosmetic Act under which investigation of new drugs is carried out. Thus, the privilege is not to be invoked to the detriment of the research subject. A researcher need not be funded by Federal money to apply for this immunity. The provision is discretionary, and must be specifically invoked to be applicable.

International Statistics.—The confidentiality of certain information on international transactions collected to satisfy a data request by the International Monetary Fund is protected by subsection 286f(c) of Title 22, United States Code (Bretton Woods Agreements Act). That portion of the Code gives the President the authority for mandatory collection of such data and protects the data from disclosure (except in the course of official duty), and from its use to the personal benefit of an official. As stated, the law applies to any agency designated by the Director of the Office of Management and Budget to collect the data. Under Executive Order 10033 both the Treasury and Commerce Departments use the mandatory authority and confidentiality provisions of this law to gather data on international investment, financial transactions, and other activities which comprise our balance of payments and international investment position accounts. The specific language is:

> "It shall be unlawful for any officer or employee of the Government, or for any advisor or consultant to the Government, to disclose, otherwise than in the course of official duty, and information obtained under this section, or to use any such information for his personal benefit. Whoever violates any of the provisions of this subsection shall, upon conviction, be fined not more than $5,000, or imprisoned for not more than five years, or both."

The Export Administration Act (Export Statistics—50 App. U.S.C. 2406) provides that identifiable export data shall be treated as confidential except as the head of a department or agency determines that withholding the data is contrary to the national interest. Thus, under this Act the Secretary of Commerce could release export documents held by Census irrespective of the provision of confidentiality contained in 13 U.S.C. 9. The language is as follows:

> "Disclosure of confidential information
>
> "(c) No department, agency, or official exercising any functions under this Act (sections 2401 to 2413 of this Appendix) shall publish or disclose information obtained hereunder which is deemed confidential or with reference to which a request for confidential treatment is made by the person furnishing such information, unless the head of such department or agency determines that the withholding thereof is contrary to the national interest."

A different confidentiality protection model is provided in the international investment survey field. The Foreign Investment Study Act (Public Law 93–479) mandated surveys on foreign investment in the United States. Under that Act, surveys of direct investment, that is situations in which a foreign person owns directly or indirectly 10% or more of a U.S. company, were to be conducted by the Department of Commerce. Foreign investment of less than 10% called portfolio investment, was the province of the Department of the Treasury. To ensure efficient and cooperative efforts designed to eliminate double counting, missing a respondent, or inappropriately classifying the type of investment, the two agencies were instructed to share necessary information with each other, but with no person not connected with the study. Thus, Congress recognized that, the survey should be done in a cooperative fashion and that sharing of identifiable data was important to successful completion.

This model has been replicated in the Foreign Investment Study Act (S. 2839). The bill has not been enacted at this time. It provides that:

> "(c) Access to Information. Access to information obtained under (this Act) shall be

available only to officials or employees designated to perform functions under this Act, including consultants and persons working on contracts awarded pursuant to this Act. Subject to the limitation set forth in subsection (d) (1), the President may authorize information furnished by any person under this Act to be exchanged between agencies or officials designated by him to carry out the purposes of this Act. Nothing in this section shall be construed to require any Federal agency to disclose to another Federal agency exercising authority under this Act any information or report collected under legal authority other than this Act where such disclosure is prohibited by law. Information collected pursuant to (this Act) may be used only

"(1) for analytical or statistical purposes within the Federal Government; or

"(2) for the purpose of a proceeding under (the enforcement) section. No official or employee designated to perform functions under this Act, including consultants and persons working on contracts awarded pursuant to this Act, may publish or make available to any other person any information collected pursuant to this act in a manner that the person who furnished the information can be specifically identified except as provided in this section. No person can compel the submission or disclosure of any report or constituent part thereof collected pursuant to this Act, or any copy of such report or constituent part thereof, without the prior written consent of the person who maintained or furnished such report under subsection (b) and without prior written consent of the customer, where the person who maintained or furnished such report included information identifiable as being derived from the records of such customer.

"(c) Violation. Any person who willfully violates the confidentiality provisions of this Act shall be fined not more than $10,000, in addition to any other penalty imposed by law."

Recent Developments and Activities Underway

Privacy Protection Study Commission.—One of the most important groups active in the study of privacy and confidentiality issues is the Privacy Protection Study Commission. This Commission was established by the Privacy Act of 1974. It is composed of seven members, three appointed by the President of the Senate, and two appointed by the Speaker of the House of Representatives.

Minimally, the Commission must

—Recommend by June 10, 1977, to the President and the Congress the extent, if any, to which the requirements and principles of the Privacy Act should be applied to entities other than Federal agencies;

—Report on such other legislative recommendations as the Commission may determine to be necessary to protect the privacy of individuals while meeting the legitimate needs of government and society for information;

—From time to time, and annually, report to the President and Congress on Commission activities in carrying out the inquiries required or authorized by the Privacy Act;

—Receive the "New System Reports" that Federal agencies are required to file with the Office of Management and Budget, the Congress, and the Commission;

—Make a study of the data banks, automated data processing programs, and information systems of governmental, regional, and private organizations in order to determine the standards and procedures now in force for the protection of personal information, including the standards and criteria governing programs, policies, and practices relating to the collection, soliciting, processing, use, access, integration, dissemination, and transmission of personal information; and

—Study and make recommendations on each of the following issues:

Whether a person engaged in interstate commerce who maintains a mailing list should be required to remove an individual's name and address from such list upon request of the individual;

Whether the Internal Revenue Service should be prohibited from transferring individually identifiable data to other

Federal agencies and to agencies of State government;

Whether the Federal Government should be liable for general damages for violation of Section 3 of the Privacy Act of 1974;

Whether and how the standards for security and confidentiality of records required by Section 552a(3) (e) (10) of the Privacy Act of 1974 should be applied when a record is disclosed to an individual or organization that is not subject to the Privacy Act's requirements; and

Whether governmental and private information systems affect Federal-State relations or the principle of separation of powers and, if so, to what extent.

Within these basic assignments, the Privacy Protection Study commission has determined to hold a series of hearings on the following subjects: mailing lists, credit cards, travel reservations, Internal Revenue Service records, depository and lending organizations, insurance, medical records, employment and personnel records, credit reporting, education, public housing and public assistance, statistics and research, and Federal oversight.

The Commission recently announced hearings on privacy matters relating to research and statistics and published draft recommendations for discussion at those hearings (*Federal Register*, Vol. 41, No. 24, December 16, 1976). The Commission found that there have been doubts raised concerning the confidentiality and limitations on use of information gathered for statistics and research; that there is a growing use for statistical and research purposes of data collected initially for administrative purposes; that the relationship between the data subject and the final user has been attenuated by development of new techniques including the matching of records from various sources; that there is a possibility for serious abuse of statistical and research data due to misuse for administrative, legislative, judicial, and law enforcement purposes; and that standards for protection of such data vary substantially across the Governmental agencies.

The most basic provisional recommendation of the Committee is to establish clear boundaries, a separation, between statistical and research data on the one hand and data used for other purposes, namely facilitating determinations about individuals, on the other. This separation, which is presently maintained either by law or procedure by most Federal statistical agencies, would protect an individual from inadvertently jeopardizing himself while cooperating with a statistical or research enquiry. The Commission recognized, however, that there are competing societal needs for data including maintaining agencies' accountability, enforcement of laws, and ensuring fairness in judicial proceedings through information availability. Thus another provisional recommendation would protect identifiable statistical or research data from being used or disclosed for other purposes unless it is specifically authorized by law or pursuant to an order of a court of competent jurisdiction. It should be noted that the Commission is not at this time prepared to make further recommendations about court ordered access to statistical or research data. It has rejected blanket immunity for these data, and tends, at this time, to favor immunity for specific projects granted by some measure of administrative discretion with judicial review over the process by which immunity was granted.

Several recommendations deal with reuse of identifiable individual data for statistical or research purposes. Here the Commission is considering which disclosures should be made in order to protect the individual without unduly impeding the flow of information. In line with maintaining the separation of data uses referred to above, the Commission provisionally recommends that data transfers could be made if:

—The research or statistical project which required identifiable data is of sufficient social benefit to warrant the transfer;

—The use of identifiable data is necessary; and

—The recipient agrees in writing not to further disclose identifiable data or to use it for other purposes.

In subsequent discussion the Commission points out that, given the principle of separation, "some existing statutory impediments to releasing such information or records to researchers and statisticians might be relaxed somewhat if there were effective limitations on further use end disclosure."

A central theme in the recommendations concerning reuse of data is that the original collecting agency retains the responsibility for the data.

Thus, if one researcher wants to give it to another, he must get the approval of the collecting or sponsoring agency in advance of a transfer. Another theme is that the transfer or reuse of data must not violate the conditions under which the data were collected in the first place. In this connection, respondents must be informed of the nature of the data collection and the possibilities and conditions under which it may be disclosed.

Statisticians and researchers should be able to use data collected for administrative purposes under the Commission's provisional recommendations. In addition to many of the above mentioned restrictions for maintaining the separation of functions, the Commission provisionally recommends certain ways for the individual to invoke some protections in his own behalf. For instance, if the data might be used for purposes other than those which are statistical or research in nature, the individual should be so informed and should have access to the data and a full accounting of the disclosures as currently provided by the Privacy Act. If the original data were collected for an administrative purpose, the individual should be given the opportunity to refuse to let his data be used for research and statistics, provided that his refusal may be overridden by an institutional review process to be established to judge on the merits of particular data transfers.

The Commission's hearings were held in early January, 1977. It is still too early to tell how the Commission will react to the information received at the hearings and, therefore, what the final recommendations will be. Clearly the Commission's final report will be a significant milestone in the area of privacy and confidentiality for statistical and research records.

Commission on Federal Paperwork.—This Commission is primarily studying ways to reduce the Federal paperwork burden on the public. One source of this burden is the limitations on sharing of data among agencies, and the Commission has developed a workplan to explore the confidentiality protection of Federal data. The Commission's final report will be of interest to the statistical community since it will face squarely the conflicts inherent in the paperwork reduction and confidentiality issues.

Commission on the Protection of Human Subjects in Biomedical and Behavioral Research (DHEW).—This Commission is addressing various aspects of the risk to research subjects of participating in behavioral and biomedical experimentation. Its report will deal at some length with the subject of confidentiality.

National Academy of Sciences Census Panel on Privacy and Confidentiality.—One illustration of the sensitivity of statistical efforts to the confidentiality status of the data is the granddaddy of all statistical efforts, the decennial Census of Population. Under the Privacy Act, an agency must tell the respondent of the routine uses which are to be made of the data which is collected from him. Thus, when the census form is distributed to households in 1980, it will be necessary to provide an accurate statement concerning the legal authority for the census report, the uses which will be made of the data, and implications of not responding. Unfortunately, the area of disclosure has some unclear characteristics at present. For example, there is an agreement between the Director of the Bureau of the Census and the Archivist of the United States which states that after 72 years (the approximate life span of an individual) the records from the Census will be available to authorized users of the National Archives Centers. Thus, individuals' reports for 1900 were recently made available, and some time shortly after the 1980 census the records for the 1910 census would be made available.

The exact status of this agreement is open to varying interpretations. For example, the Federal Records Act states that basic records are to be turned over to the Archivist after 50 years; hence, the 72 years is a gentleman's agreement. Conceivably, the conditions could be changed in the future and this makes it difficult when one is attempting to inform the respondent in 1980 what will happen to his response to the census. To further complicate the issue, each successive census since 1900 has had somewhat differing statements concerning the confidentiality of the effort. In general, the Presidential statements and enabling legislations since 1900 have become increasingly restrictive to emphasize the confidential nature of the decennial census effort. One might argue, as some have, that the agreement which was reached concerning the 1900 census records is too liberal given the subsequent promises which were made by the President and those associated with the census efforts.

Committee on National Statistics.—The Census Bureau has established a study panel under the

Committee on National Statistics (CNSTAT) of the National Academy of Sciences. This committee is undertaking several scientific inquiries to determine the attitudes of respondents toward the confidentiality protection which is provided by the Census Bureau. Would people cooperate with the Census Bureau differently if they were told that information provided would never be released, would be released after some fixed period of time such as 100 years, etc., or is a confidentiality statement basically discounted so that it has little impact on response? The panel is undertaking several studies designed to determine the effect on survey response of different privacy and confidentiality conditions. In one important study which will be conducted for CNSTAT, the Census Bureau will conduct an objective experiment in which one standard questionnaire will be used, but in which five different levels of confidentiality will be described. Responses will be validated with census records, if possible, and both the response rate and the quality of the data will be related to the degree of confidentiality promised to each panel. All responses, irrespective of the differing pledges, will be held confidential under Title 13.

In another study, an opinion survey of mail questionnaires to 1,500 people will be conducted to ascertain respondents' attitudes to confidentiality and privacy and to other factors thought to affect survey response. Some of the questions have broader impact than previous confidentiality issues, for example, does the government have more information about individuals than it needs and are the subject of age, sex, race, education, income, social security number, etc., proper questions for Government study?

ASA Ad Hoc Committee on Privacy and Confidentiality.—The *Ad Hoc* Committee on Privacy and Confidentiality of the American Statistical Association was chartered in March 1975 to study the confidentiality and privacy aspects of statistical and research activities of the Federal Government. It was to review and evaluate the implications of various laws and current proposals concerning confidentiality. Its report is intended to bring the issue to the attention of the statistical community and to stimulate discussion by the profession and other concerned groups leading to substantial recommendations where they are necessary.

The Committee's report, which will be published in a future issue of the *Statistical Reporter,* contains a discussion of the Privacy Act of 1974, the Freedom of Information Act, and the Buckley Amendment to the General Education Provisions Act among others, and cites some cases bearing on the subject matter of the committee's charter. It dwells at some length on the importance of maintaining the distinction between statistical and research uses of data on the one hand and administrative or case action uses on the other.

The Committee concludes that there is a pressing need for appropriate legal shield statues protecting identifiable data used for statistical and research purposes from mandatory disclosure under the FOIA or pursuant to a court order and from use by agencies for other purposes. The Committee further concluded that the public interest may be served in certain circumstances by transferring identifiable statistical or research data—including social security numbers—to an agency which has such a shield law in place, although it calls for additional research on matching statistical records without the use of identifiers. A closely related recommendation is to establish a public advisory panel to the Statistical Policy Division of OMB which would review the general policy and specific cases of transferring identifiable data among agencies for statistical purposes, and would advise on the appropriate balance between the public's rights of privacy and the public's needs for information. Another recommendation of the Committee was that any shield statute which is developed should allow the dissemination of microdata tapes if (a) it is virtually impossible for a recipient to identify any particular data subject, or (b) if the recipient agrees in advance to strict confidentiality protections for the data received.

A major recommendation of the Committee was that agencies should not make unqualified pledges of confidentiality unless supported by a legal shield which provides unbreachable protection for the data in their custody. Agencies should be candid with respondents, especially if a possibility exists of further release of the data in identifiable form, although there is no need to inform the respondent of all planned or possible statistical or research uses of the data. A general statement explaining that use of the data would be permitted only for statistical purposes in which individual reports would not be identifiable should be sufficient. The Committee found

that the fears concerning the effect of such a statement on achieving adequate response rates have not yet been demonstrated by empirical evidence.

Other related activities, Federal and nonfederal.— Several related efforts are underway or completed:

A variety of Federal regulations and agency committees on the protection of human rights such as the Task Force on Health and Medical Records, a subcommittee of the Department of Health, Education, and Welfare's Health Data Policy Committee, will examine confidentiality procedures in the Public Health Service;

The Committee on Federal Agency Evaluation Research Report (1975), of the National Academy of Sciences, National Research Council focused on how to do a good job of program evaluation using confidential data while protecting the sources of the information;

The American Political Science Association, in conjunction with several other professional associations, is examining the issue of protecting researchers from being required to reveal the individual data which they have concerning subjects of their research;

About 20 medical and other associations have joined together to support the National Commission on Access to and Use of Health Records;

The American Statistical Association, under the subsection on survey research methods is also working on a project funded by the National Science Foundation entitled "An Assessment of Survey Practices and Data Quality in Scientific Surveys of Human Populations"; and

A Ford Foundation sponsored five-nation study will examine how to best make use of government microdata without infringing confidentiality.

All of the efforts are likely to be influential in examining the issues associated with confidentiality and Federal data systems.

Resolution of the Confidentiality Issue in Federal Research and Statistics

Much has been said and written about the need for adequate protection of confidentiality for data used in statistical and research programs conducted or funded by the Federal Government. While there are many efforts underway to address these questions and it would be premature to propose a final solution to the problems addressed in this chapter, some basic principles are becoming clear. The following proposal would accomplish basic confidentiality protection and would be consistent with the principles of confidentiality discussed above. This proposal has benefitted from many discussions and written communications with Government officials and the public over recent years, and is not materially different in its thrust with the directions taken by the more recent committees, Commissions, and study groups now working on the problem. Some steps must be taken immediately, for example, the development of strong confidentiality laws by individual agencies. In drafting such laws, care must be taken to refrain from unduly inhibiting the flow of identifiable statistical or research data between protected enclaves under strict guidelines where a demonstrated need arises for the data transfer. While it may take some time to resolve the public and Congressional concerns about transfer of such data, this section characterizes the way in which statistical and research data could be protected and used in the future.

1. All agencies involved in the collection of statistical or research data should have mandated legislative protection for the confidentiality of information collected or otherwise obtained to be used solely for statistical or research purposes. This should apply to both commercial and personal data.

The element of trust which is involved in voluntary submission of data should be backed up by clearly mandated protections so there is no uncertainty concerning the confidential nature of the data submission, and so that voluntary data collection programs can continue to be effective. Even in mandatory data collection efforts, it is essential to have the cooperation of respondents if the data submission is to be accurate and comprehensive. Protection from disclosures helps assure that the quality of submission is of the highest possible order.

As an alternative, which might be more appropriate in certain circumstances, specific grants of confidential privilege for particular types of data should be granted by a responsible official under legal guidelines. This arrangement would be appropriate primarily for statistical or research activities carried out in or spon-

sored by agencies which are not solely oriented to statistics or research. In either case the protection should be strong enough to provide immunity from compulsory legal process and disclosure under the Freedom of Information Act.

2. The uses of statistical data must be restricted to prevent their use in identifiable form for making determinations which affect a particular respondent.

While this is partially covered in the first principle, it should be explicit that the confidentiality of the statistical data means that these data sets are not available for other regulatory, administrative, or judicial purposes, even within the same agency or department collecting the data. Hence, for example, environmental data collected for statistical purposes should not be used for regulatory purposes, and the statistical data collected from households should not be available to tax or welfare officials. The distinction between regulatory and statistical uses must be made clear at the outset, and there must be no possibility of divergence in these uses. In effect, statistical data, whether maintained in statistical agencies or not, should be placed in a protected enclave.

3. Exchange of data among the protected enclaves should be feasible under controlled conditions.[15]

The development of comprehensive data systems concerning the interrelationships among various aspects of social and economic patterns sometimes requires that various data sets be combined. If the data are used by a recipient only for statistical or research purposes, there should be no concern about the exchange of information among statistical agencies which have a protected enclave status in law and are in a position to assure confidentiality. In addition, it would be excessively burdensome on the responding public to require multiple submissions of essentially the same information to different agencies because one collecting agency cannot share its data with another agency which has an authorized need for the data.

The element of public trust is essential to the effectiveness of Federal statistical and research programs. The development of strong protective enclaves will provide the essential basis for that trust. The needs, in some circumstances, for transferring identifiable data among these enclaves to achieve a good public purpose will have to be clearly demonstrated in order to maintain the confidence of the public which is necessary.

This principle for statistical data systems is by far the most controversial, especially among those individuals who wish complete knowledge and control of uses of data pertaining to them held by Federal agencies. For the long-range development of sound statistical information on social processes, however, it is essential.

The first step in achieving this situation is the enactment of a clear legal status as protected enclaves for selected statistical and research agencies in the major departments, and for other clearly identified statistical and research units within other agencies. The enclave must be insulated from intervention and from unauthorized access to data. Employees must be subject to strict ethical standards established with respect to data handling and the penalties for voluntarily releasing identifiable data contrary to law. Once an individual business or other person has agreed to provide information for statistical purposes, there should be a mechanism for transferring identifiable data among agencies with a continued assurance of legal protection. At a minimum, this would require:

a. A statement at the time of data collection about the general character of potential statistical uses;

b. A review agency that has power to authorize transfers (OMB has such authority under the Federal Reports Act for agencies under its jurisdiction and under a fairly restrictive set of conditions);

c. A clear set of criteria that specifies when transfer of identifiable data would qualify as being of sufficient public interest to justify the transfer; and

d. A set of procedures to provide for removal of identifiers or destruction of the basic data files after the purposes of the transfer have been achieved.

4. Administrative data sets should be accessible to statisticians and researchers in protected enclaves for some statistical uses unrelated to the purposes of the original data collection.

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[15] The Standard Statistical Establishment List maintained by the Census Bureau is a potential source of identifiable information about business enterprises and establishments for other agencies' use in developing statistically valid samples for surveys. Under present law (13 U.S.C. 9) this information is not available outside the Census Bureau.

In certain cases, as mentioned above, agencies need to use administrative records for establishing sample frames, for verifying the total universe characteristics, and for other statistical or research purposes. Identifiable data extracted from administrative records for statistical purposes should be held confidential by the agency which receives them in the same manner that data collected directly from the respondent are held confidential. In essence, this suggests the creation of a protected data set composed of those items derived from administrative sources for use in the protected enclave. Thus, under this procedure, subpoena and other access to the identifiable data through the original administrative submission, would not be restricted, but such access would not be permitted from the statistical or research data file. At the same time, the controlled exchange of data extracted from administrative records among statistical agencies would not be restricted further than the process defined in the third principle stated above would imply.

The above principles would establish statistical data on a special class of information. To summarize, it must be made clear from the outset in the laws which would implement these principles that: (a) statistical and research data may not be disclosed in identifiable forms or used for determining the benefits, rights, and privileges of individuals, or of business, and (b) the sole use of these data is for determining relationships and preparing reports or anonymous microdata sets which are statistical or research in character. Such protection of these data would be uniquely strong. Once this protection is established, a controlled exchange of statistical data could appropriately be encouraged to improve the accuracy and comprehensiveness of the various measures employed, as well as to assure reduced costs of data collection and minimum reporting burden.

Further Developments are Needed

In conjunction with the steps discussed above, the statistical profession needs to continue the development of alternative techniques which would reduce the need for transferring individually identifiable microdata between agencies or increase the amount of detailed microdata which can be made available to the public.

In data linkage, research should continue on the promising development of optimal grouping techniques which may yield quite efficient parameter estimates of commonly used statistical distributions. Since the best choice of order statistics or grouping intervals depends upon the parameters of interest, different methods can be devised which will allow the merging of grouped data and estimation of relationships between basic variables without linking individual records, although with some loss in precision.

Several options exist for increasing the amount of detail of individual records which can be released to the public without identifying a particular data subject. The traditional means for reducing disclosures, of course, is grouping of data into cells which represent three or more respondents. The Census Bureau has developed disclosure analysis techniques which take other factors into account as well. Additional research must be done to explore other possibilities involving provision of public use microdata records with camouflaged data elements. One method would be to perform random rounding. Another would be to add an error term with zero mean and known variance on sensitive data, say income, so that no data would not be strictly accurate—the greater the variance the greater the confidentiality protection. Finally, various schemes for encription of basic data by use of a transformation should be explored further. Transformations for which there is an inverse permitting retrieval of the basic data from transformed data are used typically in administrative data such as patient or school records, provides a good measure of confidentiality protection. If the transformation has no inverse, but has certain properties (for example, if the relationship between input and transformed data is monotonic), the protection is even better.[16]

Other areas of inquiry which should be pursued include:

- The controls on record linkage and the criteria for such exchange need careful conceptual development to assure that the agencies adhere to the basic purposes and principles of confidentiality;
- Standards for the quantity and quality of data to be linked must be established. Further, specification of time intervals for reten-

[16] Tore Dalenius, "Privacy Transformations for Statistical Information Systems," *Journal of Statistical Planning and Inference*, Vol. 1, No. 1, 1976.

tion of individual identifiers must be established;

- Ethical standards and penalties for abuse of these standards should be the subject of wide professional review, perhaps with the American Statistical Association proposing a set of minimum standards to the agencies; and
- Some technical and engineering questions concerning the security of data files, particularly computerized files, must be explored in depth.

Finally, of course, the statistical profession has a responsibility for demonstrating to the public the benefits of statistical data gathering, protection, and linkage. The many constructive features of the Privacy Act of 1974 must be promoted. In these many other ways, the creditability and effectiveness of Federal statistical activities will be enhanced in the future.

Next Steps

The principles of confidentiality and the strategy for their implementation discussed in this chapter should be interpreted as overall requirements for achieving improved confidentiality for data used for statistical and research activities, while simultaneously enhancing the quality of the end product of these activities. There are many specific problems yet to be resolved, and the various activities that are described above will contribute significantly to this effort. Several agencies are engaged in examining their own needs for improved confidentiality laws and practices, and some have embarked on the difficult task of drafting possible legislation, even as the issues are being explored and answers are being sought.

The best approach to this problem is for each agency to study its own situation with respect to data confidentiality and to develop solutions which fit its unique problems within the general principles suggested above. As agencies begin to formulate their plans, the Office of Management and Budget will review their progress. This process will ensure that the legal proposals will serve the purposes of each agency while enhancing the capability of the U.S. Federal Statistical System, when viewed as a whole, to address the important informational needs of the day. We must first demonstrate the ability to perform on our pledge to maintain statistical and research data as protected data. Only as improved legal protection of confidentiality is secured throughout the System will the ability to engage in increased data sharing under controlled conditions to achieve those important informational goals be available to us.

Conclusion

The protection of confidentiality of statistical and research information and the appropriate balance to be achieved with the conduct of the Government's information gathering and analytical activities will continue to be the subject of concern and public debate. Consideration of the public's right to know and, to a lesser extent, the burden on the public and Federal requests for information, will also be part of this debate. The Privacy Act addresses some of these issues but leaves important questions unresolved. While one approach to these questions has been explored here, others will undoubtedly be suggested in further discussion. An ongoing dialogue is necessary to informed policymaking in this complex area.[17]

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[17] Much of the material presented here is based on other documents and speeches given by members of the Statistical Policy Division Staff. These sources include:

a. Joseph W. Duncan, "The Impact of Privacy Legislation on the Federal Statistical System," *Public Data Use*, Vol. 3, No. 1, January 1975.

b. "Confidentiality and the Future of the U.S. Statistical System," *The American Statistician*, May 1976.

c. "Federal Statistics—Recent Legislation and Activities Affecting Confidentiality—An Overview of Selected Activities," *Proceedings of the Workshop on Privacy and Confidentiality*, Cooperative Health Statistics System, National Center for Health Statistics, DHEW, March 1976.

d. "Current and Needed Legislation Relating to Confidentiality in Statistical Programs," 16th National Meeting of the Public Health Conference on Records and Statistics, June 1976.

e. David T. Hulett, "Confidentiality of Statistical and Research Data and the Privacy Act of 1974," *Statistical Reporter*, June 1975.

f. "Confidentiality and the Right to Privacy in Medical Research and Statistics," *Proceedings of the National Conference on Mental Health Statistics*, September 1975, (forthcoming).

g. "Comments on Principles of Development of a Model State Law Providing Authority to Collect and Transmit Cooperative Health Statistics System Data and Providing for Confidentiality, Privacy, and Security of CHSS Data," (*Proceedings* see item c above).

CURRENT DEVELOPMENTS

PLANNED DATA SERIES ON WORKERS ON LAYOFF

The Bureau of Labor Statistics, with the publishing of the December 1976 issue of *Employment and Earnings*, began regular (monthly) publication of Current Population Survey (CPS) data on workers on layoff. The data, collected since 1967, are part of a monthly series that classified unemployed persons according to reason for unemployment. The newly published series differs in several respects from the layoff rate in manufacturing series derived from the BLS establishment labor turnover survey. Unlike the establishment survey, the CPS provides information on the demographic composition and unemployment duration of persons on layoff. A comparison of the two layoff measures appears as an article in the November 1976 issue of *Monthly Labor Review* entitled "Workers on Layoff: a Comparison of Two Data Series." (JANET SCHOLL, BUREAU OF LABOR STATISTICS, DEPARTMENT OF LABOR, telephone (202) 523-1371.)

CONFIDENTIALITY ISSUES: DISCLOSURE AVOIDANCE

The Subcommittee on Confidentiality Issues of the Office of Management and Budget's Interagency Committee on Statistical Methodology is carrying out an analysis of statistical disclosure and disclosure avoidance techniques. This note describes the work group task and requests pertinent materials from readers.

Work Group Purpose.—The work group is focusing on the avoidance of disclosure of information about specific individuals or establishments through release of tabulations or public-use microdata files. Many Federal agencies which release statistical tabulations or microdata files for statistical purposes have statutory, regulatory or policy requirements that the releases be made in such a way that no information traceable to a specific individual or establishment be disclosed.

Problem Description.—There is no universally accepted definition of disclosure. Any available tabulation of the characteristics of some population is likely to narrow the range of our uncertainty about characteristics of specific individuals known to us to be members of that population. The extent of disclosure depends on a number of factors, such as the number of separate variables for which information is provided, the number of classifications or categories used for each variable, the distribution of the population among these categories, whether the tabulations are based on data for the entire population or only for a small sample, and the extent to which some of the information about the same individuals is available from other sources. Similar factors affect the likelihood of disclosure in the release of microdata files from which obvious identifiers such as names, addresses and social security numbers or employer identification numbers have been removed.

The work group does not expect that it can develop a precise general-purpose definition of disclosure or a single disclosure-avoidance technique that would be best for all types of releases of data. However, there are a number of useful techniques which have been developed and are being used in the United States and elsewhere. The work group can perform a useful service by identifying and evaluating these techniques and making its findings available to employees of Federal agencies who have responsibilities in this area.

Request for Information.—The Work Group is interested in receiving materials pertaining to statistical disclosure avoidance techniques. Of particular interest are the following:

(1) information about any harm which may have befallen an individual or establishment as a result of statistical disclosure;

(2) information about the reactions of both data suppliers and data users to the effects of disclosure avoidance techniques presently in use; and

(3) information on current practices and policies regarding statistical disclosure within various federal agencies.

Please call or forward materials to the Work Group Chairman, John A. Michael, National Center for Education Statistics, 400 Maryland Ave., S.W. Rm. 3061, Washington, D.C. 20020, telephone (202) 245-3290. (JOHN A. MICHAEL, NATIONAL CENTER FOR EDUCATION STATISTICS, DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE, telephone (202) 245-3290.)

THE GEOGRAPHICAL MOBILITY OF AMERICANS: AN INTERNATIONAL COMPARISON

A study comparing levels of geographical mobility in the United States and other countries was recently released by the Bureau of the Census. It is the second in a new series of analytical reports which feature the interpretations and explanations of individual authors.

Written by Larry H. Long and Celia G. Boertlein, the study shows that around 1970, annual rates of residential mobility were 18.6% in the United States, 15.7% in Australia, 12.0% in Japan, 11.1% in Great Britain, 9.1% in Taiwan, and 4.3% in Ireland. Over a 5-year period in the late 1960's, the percent changing usual residence reached 45 to 50% in the United States, Canada, and Australia, compared with 36% in Great Britain and Japan.

These rates of moving mean that in a lifetime an average resident of the United States, Canada, and Australia probably makes 12 moves from one house or apartment to another. An average Briton probably moves eight times, compared with seven moves for a Japanese citizen, six moves for a resident of Taiwan, and three or four moves per person in Ireland. Exactly comparable data do not exist for other countries, but other data confirm higher rates of migration in North America than Europe.

The United States, Canada, and Australia have high rates of short-distance moving in addition to high rates of long-distance migration. The authors speculate that high rates of moving in these three countries stem in part from their history as nations of immigrants, where the geographically mobile populations of other countries settled. The three countries also share a history dominated by a frontier that needed to be settled and each has taken measures—like the Homestead Act in the United States—to encourage its citizens to move to the less densely populated regions. The result has been successive waves of internal movement to settle different parts of what were initially empty continents. A third reason offered by Long and Boertlein for the high mobility in the three nations is a metropolitan structure characterized by numerous, widely scattered urban centers which compete with each other for industry, migrants, and national pre-eminence, thereby keeping rates of migration at a high level.

The authors speculate that advances in transportation and communication can help prevent high rates of moving from having the socially disorganizing effects that are often assumed to result from geographical mobility. Rates of migration in the United States increased around the time of World War II but have remained stable since then. The authors advance several reasons for thinking that geographical mobility is beginning to decline in the United States.

Copies of the study, "The Geographical Mobility of Americans: An International Comparison," *Current Population Reports*, Series P-23, No. 64 (45 pp., $1.05), are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. (LARRY H. LONG or CELIA G. BOERTLEIN, BUREAU OF CENSUS, DEPARTMENT OF COMMERCE, telephone (301) 763-5846.)

1975 ESTIMATES OF ELDERLY POPULATION BY COUNTY

The National Clearinghouse on Aging, in conjunction with the Bureau of the Census, recently prepared estimates of the 60+ and 65+ populations for each county in the United States as of July 1, 1975. The estimates are presented in a series of tables, one for each State. The tables also show the 1970 census counts for these age groups and the amount and rate of change between 1970 and 1975.

In addition to estimates for each State and county, subtotals are shown for approximately 600 Planning and Service Areas (PSAs). With minor exceptions, PSAs consist of single counties or groups of counties and cover the entire Nation. These PSAs were designated by State Offices on Aging in each State as mandated by Title III of the Older Americans Act as amended in 1973 and are intended to serve as target areas for a national network of Area Agencies on Ag-

ing, whose function is the development of a system of comprehensive coordinated services for the older population.

Two additional tables were also prepared. One is a summary table providing similar data for the United States and each Federal Region, State, and PSA. Subtotals for the metropolitan and nonmetropolitan populations of the United States and each State are shown. The second is an analytical table that provides similar data for PSAs classified by size of total population and percent of total population residing in metropolitan counties.

Limited copies of these State tables, with the additional tables and a technical document (HEW Publication No. (OHD) 77–20085) describing the estimation methodology and some of the limitations of the estimates, can be obtained (specify States desired) by writing to the Chief, Data Analysis and Dissemination Division, National Clearinghouse on Aging, AoA/OHD/DHEW, 330 Independence Avenue, S.W., Washington, D.C. 20201 (DONALD G. FOWLES, ADMINISTRATION ON AGING, DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE, telephone (202) 245-0768.)

U.S. FERTILITY TABLES, 1917-73

The National Center for Health Statistics has recently released a report entitled, *Fertility Tables for Birth Cohorts by Color, United States, 1917–73.*

This new report from the National Center for Health Statistics presents fertility data for actual groups or cohorts of women as they pass through their childbearing years of 14 through 49. The tables contain data for calendar years 1917–73. These data have been prepared as a revision and extension of cohort fertility rates previously published by this office. The set of rates in this volume utilizes revised population estimates prepared by the Bureau of the Census for this purpose, and has been extended to include data for the two major color groups, white and all other, as well as for all women.

Four cohort measures are shown. The central birth rates are similar to the age-specific birth rates computed annually for many geographic areas. Cumulative birth rates, the sum of central birth rates, show the number of children ever born up to the indicated age. The parity distribution shows a proportional distribution of all women in the cohort by parity (the number of children they have born alive). Birth probabilities show the probability that a woman of a given age and parity will have a child in the next year.

The volume is intended primarily as a reference volume, consisting of detailed tables and methodological appendixes. The data will be of particular use to demographers and others studying trends in fertility.

Single copies of *Fertility Tables for Birth Cohorts by Color, United States, 1917–73* (DHEW Publication No. (HRA 76–1152, 459 pp., $18.80) are available free of charge from NCHS, Room 8-20, 5600 Fishers Lane, Rockville, Maryland 20852, Attention: M. Flaer, or telephone (301) 443-NCHS. Multiple copies may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. (SANDRA S. SMITH, NATIONAL CENTER FOR HEALTH STATISTICS, DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE, telephone (301) 443-1260.)

DAYTIME CARE OF CHILDREN: OCTOBER 1974 AND FEBRUARY 1975

The Bureau of the Census has recently issued a report entitled "Daytime Care of Children: October 1974 and February 1975." This report presents data on the arrangements made for the daytime care of 3-to-13-year old children of mothers in and out of the labor force. These data are presented by age, race, school enrollment status of the child, the marital status of the mother, full-time work status of the mother, and family income.

Selected statistical information from this report indicates that of the approximately 41 million children 3 to 13 years old in the United States, about 33 million, or 8 out of 10, are usually cared for by one of the parents while the children are not in school. Fairly small proportions are taken outside their home for care, either to the home of a relative, to the home of someone who is unrelated to them (about 1.2 million to each), or to a day care center (326,000). Thus, the use of a day care center is the least often reported child care arrangement in the United States.

Only for working mothers is there any significant variety of types of care used for the child. If the parents cannot stay at home with them, chil-

dren of preschool age most frequently are taken outside the home to be cared for by a relative (11%) or by a person who is unrelated to them (15%). Approximately 2% of children 3 to 6 years old and virtually no older children (those 7 to 13 years old) are cared for in an organized day care center. About 81% of black children of preschool age whose mothers work are cared for by someone who is related to them. The comparable figure for white children is 72%. Black working women are more likely than white working women to have a relative care for their child.

Copies of the report, "Daytime Care of Children: October 1974 and February 1975," *Current Population Reports,* Series P-20, No. 298 (pp. 23, 65 cents) are for sale from the Superintendant of Documents, U.S. Government Printing Office, Washington, D.C. 20402, or at Commerce Department district offices. (ANDREA WORD, BUREAU OF CENSUS, DEPARTMENT OF COMMERCE, telephone (301) 763-5050.)

CENSUS REPORT ON MARRIAGE HISTORY

The Bureau of the Census has published a report entitled "Number, Timing, and Duration of Marriages and Divorces in the United States: March 1975." This report includes a part of the information from the June 1975 Current Population Survey that was designed to cast light on the marital and fertility history of adults in the United States. The report features statistics for successive birth cohorts on number of times married and how the first and last marriages ended; on age at marriage, divorce, remarriage, and redivorce; and on the intervals between first marriage, divorce after first marriage, remarriage after first divorce, and redivorce after second marriage. The report includes 20 text tables and 5 detailed tables.

The findings include new types of evidence of the postponement of marriage and the rapid increase in divorce and remarriage among young adults. This means that successive marital events are occurring now within a more narrow range of ages; however, the proportion of persons who have experienced divorce by a given age has increased substantially throughout the adult population. The pattern of divorce by duration of marriage shows a virtually uninterrupted diminution after the peak of divorce occurs within the first few years after marriage. The peak of divorce is reached sooner after remarriage than after first marriage, and the study shows that the median age at divorce occurs within 5.3 years after remarriage as compared with 7.0 years after first marriage.

Copies of the report, "Number, Timing, and Duration of Marriages and Divorces in the United States: June 1975," *Current Population Reports,* Series P-20, No. 297 (34 pp., $.95) are for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, or at any Department of Commerce district office. (PAUL C. GLICK, BUREAU OF THE CENSUS, DEPARTMENT OF COMMERCE, telephone (301) 763-7030.)

RECENT VITAL AND HEALTH STATISTICS REPORTS

Described below are some of the reports published recently by the National Center for Health Statistics. Multiple copies of these reports may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. When ordering, please include DHEW publication number. Single copies are available free of charge from NCHS, Room 8-20, 5600 Fishers Lane, Rockville, Maryland 20852, Attention: M. Flaer, or call (301) 443-NCHS.

Current Listing and Topical Index to the Vital and Health Statistics Series 1962–1975 (DHEW Publication No. (HRA) 76–1301, 21 pp., 55 cents) is the most recent index to the health topics covered in the *Vital and Health Statistics* Series.

Series 10 (Data from the Health Interview Survey):

Hospital Discharge and Length of Stay: Short-Stay Hospitals United States, 1972 (No. 107, DHEW Publication No. (HRA) 76–1534, 66 pp., $1.35) shows data on discharges from short-stay hospitals from the 1972 Health Interview Survey of the civilian, noninstitutionalized population. The estimates of hospital discharges are based on reported discharges which followed the completion of one or more nights in a hospital during the 6-month period prior to the interview. The data are shown distributed by selected demographic characteristics, activity limitation status, length-of-stay intervals, condition for which the patient was hospitalized, surgical treatment, and hospital ownership.

Series 11 (Data from the Health Examination Survey):

Total Serum Cholesterol Values of Youths 12–17 Years, United States (No. 156, DHEW Publication No. (HRA) 76–1638, 35 pp., 85 cents) presents and discusses serum cholesterol values by age, sex, race, and socioeconomic level of youths 12–17 years of age in the United States, 1966–70. The role of cholesterol as a risk factor in increased morbidity and mortality from cardiovascular disease is discussed, and suggestions are given regarding clinical treatment of elevated serum cholesterol in adolescents.

Skin Conditions of Youths 12–17 Years, United States (No. 157, DHEW Publication No. (HRA) 76–1639, 66 pp., $1.30) presents estimates of the prevalence of facial acne and other skin conditions of youths in the United States by age, sex, race, geographic regions, and socioeconomic background as well as in relation to other selected findings from the Health Examination Survey of 1966–70.

Series 13 (Data on Health Resources Utilization):

Utilization of Short-Stay Hospitals, Summary of Nonmedical Statistics, United States, 1973 (No. 23 DHEW Publication No. (HRA) 76–1774, 43 pp., $1.25) presents data on the utilization of short-stay hospitals based on data collected in the Hospital Discharge Survey from a national sample of hospital records of discharged patients. Nonmedical data are presented on the number and rate of discharges and of days of care and average length of stay for patients discharged, by age, sex, and color and by geographic region, bed size, and type of ownership of hospitals. The report is divided primarily into three areas: an analysis of hospital discharges, and analysis of days of care and length of stay, and some comparisons between the four geographic regions.

Surgical Operations in Short-Stay Hospitals, United States, 1973 (No. 24, DHEW Publication No. (HRA) 76–1775, 54 pp., $1.15) presents data on the number and rate of inpatients with surgery discharged from non-Federal short-stay hospitals and the types of surgical operations performed. Estimates of the number of patients with surgery and of operations, grouped by surgical classes and categories, are shown by the demographic characteristics of the operated patients and by geographic region and size of hospital. The data for this report are based on information abstracted by means of the Hospital Discharge Survey from a national sample of the hospital records for discharged inpatients.

Series 14 (Data on Health Resources: Manpower and Facilities):

Inpatient Health Facilities as Reported from the 1973 MFI Survey (No. 16, DHEW Publication No. (HRA) 76–1811, 66 pp., $1.30) gives data on inpatient health facilities collected in the Master Facility Inventory (MFI) Survey during 1973. The MFI includes listings of nursing homes, general hospitals, specialty hospitals, and other health facilities. Data are presented on number of institutions, beds, and employees as well as types of ownership, geographic distribution, and comparisons with previous MFI surveys.

NEW REPORTING PLANS AND FORMS

The following listing gives brief descriptions of a selected group of new reporting plans and forms approved between November 18 and December 10, 1976 by the Office of Management and Budget under the provisions of the Federal Reprots Act. The description refers to surveys and data collection programs which are just being started or are soon to be started so results are now yet available.

Department of Agriculture

Agricultural Research Service

Nationwide and Supplemental Surveys of Household Food Consumption and Food Intakes of Individuals (singletime).—The study, which will be conducted in 50 States and Puerto Rico, is designed to provide current information on the food and nutritional content of the Nation's diet and changes occurring since 1965–66 when the previous survey was undertaken. In addition, surveys of elderly persons, 65 years and older, and a "bridge sample" which will use 1965–66 survey methods to link the two reporting periods and provide a measure of change will be conducted. The objectives of this activity include the determination of the kind, amount, and money value of foods consumed by different population groups (both households and individuals), the practices of households in the purchase and use of specific foods, and the nutritive content of foods consumed. This study will provide the primary statistical linkage between consumers and the foods they eat. (For further information: ROBERT RIZEK, AGRICULTURAL RESEARCH SERVICE, DEPARTMENT OF AGRICULTURE, telephone (202) 436-8457.)

Economic Research Service

Boll Weevil Control Survey (annual).—The cotton boll weevil is one of agriculture's most serious insect pests. Recently, some new control methods have been proposed, including complete eradication. The Economic Research Service has the job of testing alternative control methods for economic feasibility. Information on costs, effectiveness, and the environment will be gathered before and after controls are applied. The survey results will be useful to Department managers in selecting the best system of control. (For further information: IRVING R. STARBIRD, ECONOMIC RESEARCH SERVICE, DEPARTMENT OF AGRICULTURE, telephone (202) 447-8400.)

Evaluation of Automated Cotton Fiber Test Line Results in Marketing (annual).—New methods for testing cotton fiber quality have been developed in recent years. This study is to test the acceptability of the new methods to traders. Test equipment has been set up to provide new information on fiber quality. Economic Research Service will follow-up with traders to determine how extensively the new information was used in making market decisions. (For further information: E. H. GLADE, ECONOMIC RESEARCH SERVICE, DEPARTMENT OF AGRICULTURE, telephone (202) 447-8400.)

Department of Health, Education, and Welfare

Food and Drug Administration

National Survey of Physicians Regarding Diagnosis and Treatment of Essential Hypertension (singletime).—This study is designed to determine physicians' information, attitudes and reported behavior toward diagnosis and treatment of hypertension and toward the use of nurses and health professionals in such activities. The survey, which will involve 6000 physicians, is being undertaken in response to a recommendation of the National High Blood Pressure Education Program. (For further information: R. J. TEMPLE, FOOD AND DRUG ADMINISTRATION, DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE, telephone (301) 443-3181.)

Department of State

Information on political contributions and fees or commissions in connection with the sale of defense articles or services (on occasion).—Section 604(b) of the International Security Assistance and Arms Export Control Act of 1976 (Public Law 94–329, 90 Stat. 767) enacted a new section 39 of the Arms Export Control Act entitled "Fees of Military Sales Agents and Other Payments." This law directs the Secretary of State to require by regulation adequate and timely reporting on political contributions, gifts, commissions and fees paid, or offered or agreed to be paid, by any person in connection with (a) sales of defense articles or defense services under section 22 of the Arms Export Control Act, or (b) commercial sales of defense articles or defense services licensed or approved under section 38 of the Arms Export Control Act; to or for the armed forces of a foreign country or international organization in order to solicit, promote or otherwise secure the conclusion of such sales. The International Traffic in Arms Regulations (ITAR) has been amended by adding a new part 130, specifying the amounts and kinds of payments, offers and agreements to be reported, and the form and timing of reports. Part 130 also requires reports on the names of sales agents and other persons receiving such payments, and establishes certain recordkeeping requirements. (For further information: WILLIAM B. ROBINSON, OFFICE OF MUNITIONS CONTROL, DEPARTMENT OF STATE, telephone (202) 235-9755.)

OTHER REPORTING PLANS AND FORMS

Shown below, by agency, is a list of new reports approved between November 18 and December 10 1976 excluding those described above. Requests for copies of these reports should be addressed to the public reports clearance officer of the sponsoring agency. A list of agency clearance officers may be obtained by writing to Marsha Traynham, Statistical Policy Division, Office of Management and Budget, Washington, D.C. 20503.

During November approximately 96 forms reached their expiration dates and are no longer approved for use.

DEPARTMENT OF AGRICULTURE

National Listing of Consulting Foresters

DEPARTMENT OF COMMERCE

Sales, Inventory, and Purchases Survey
Questionnaire and Flash for Structure Respondents—1976 Census of Camden, New Jersey
Survey of Earnings Questionnaire; Employer Questionnaire
(Part of 1980 Decennial Census of Population and Housing) Camden, New Jersey
National Longitudinal Surveys, Survey of Work Experience of Mature Women—1977 Questionnaire and Advance Letter
Survey of Export Management Companies on Export Trading Company Concept
Identification of Local Public Works Project Officer, Contractors, and Subcontractors
Trip Report of U.S. Hook and Line/Shrimp Boats Fishing Off Mexico
Local Public Works Payroll Reporting Form

DEPARTMENT OF DEFENSE

Reserve Forces Attitude Survey
Industrial Security Procedures and Practices Outside the United States

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

National Surveillance of Dialysis-Associated Hepatitis
Inventory of Psychiatric Hospitals
Inventory of General Hospital Psychiatric Services
Hospital, Hospital-Skilled Nursing Facility Complex, Cost
Patient Service Questionnaire and Patient Profile and Cost-Finding Surveys
Data Collection Instrument for Migrant Child Welfare Project
Single Letter of Credit Questionnaire for Recipients
National Day Care Home Cost-Effect Study: Phase One Survey
Nurse-Midwifery Training Program

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

Request for Land Purchase Approval
Biweekly Report of Site Acquisition
Land Summary
Real Estate Settlement Record
Final Report on Completed Land Acquisition

DEPARTMENT OF INTERIOR

Application for Establishment of Royalty Values
Crude Oil and Petroleum Products Pipeline Survey

DEPARTMENT OF JUSTICE

National Survey of Crime Severity, Supplement to the National Crime Survey

DEPARTMENT OF LABOR

Current Monthly Pension Income
Directory of National Unions and Employee Associations, Unaffiliated Intrastate and Single-Employer Unions

DEPARTMENT OF TRANSPORTATION

Airport Financial Statement and Related Instructions—Terminal Area Financial Data
Certification/Agreement

DEPARTMENT OF THE TREASURY

Cargo Declaration

ENVIRONMENTAL PROTECTION AGENCY

Emissions Defect Report

COMMUNITY SERVICES ADMINISTRATION

Certification of Compliance with Section 211, Economic Opportunity Act

GENERAL SERVICES ADMINISTRATION

Solicitation Application for Service Contracts

NATIONAL SCIENCE FOUNDATION

Reputational Study of Major Innovations in Four Fields of Science

U.S. INTERNATIONAL TRADE COMMISSION

Producers' Questionnaire (Television Receivers)
Importers' Questionnaire (Television Receivers)
Purchasers' Questionnaire (Television Receivers)

VETERANS ADMINISTRATION

Veteran's Election to Receive Current Law Pension

PERSONNEL NOTES

DEPARTMENT OF COMMERCE

Bureau of Economic Analysis: MORRIS R. GOLDMAN, formerly Deputy Director, retired October 31 after 35 years of Federal Government service. ALLAN H. YOUNG, formerly Chief, National Income and Wealth Division, was appointed Deputy Director. EVELYN M. PARRISH, formerly Chief, Balance of Payments Division, retired October 23 after 36 years of Federal Government service.

LOUIS J. MOCZAR, formerly Assistant Chief, Balance of Payments Division, was appointed Chief, Balance of Payments Division. GEORGE R. GREEN, formerly Assistant Chief, Business Outlook Division, was appointed Chief, Business Outlook Division.

DEPARTMENT OF THE TREASURY

Office of the Secretary: DANIEL OPITZ, Operations Research Analyst, has been added to the Program Analysis staff of the Office of Budget and Program Analysis.

Office of Financial Analysis: JAMES M. RUSSELL has been designated Assistant Director for Economic Forecasting. JAMES R. UKOCKIS has been designated Assistant Director for General Economics.

EQUAL EMPLOYMENT OPPORTUNITY COMMISSION

ANDRE VAN REST, formerly Assistant Professor of Economics at Cameron University, Lawton, Oklahoma has joined the staff as an economist in the Government and Educational Analysis Section.

SCHEDULE OF RELEASE DATES FOR PRINCIPAL FEDERAL ECONOMIC INDICATORS

February 1977

Release dates scheduled by agencies responsible for the principal economic indicators of the Federal Government are given below. *These are target dates* that will be met in the majority of cases. *Occasionally agencies may be able to release data a day or so earlier or may be forced by unavoidable compilation problems to release a report one or more days later.*

A similar schedule will be shown here each month covering release dates for the following month. The indicators are identified by the title of the releases in which they are included; the source agency; the release identification number where applicable; and the *Business Conditions Digest* series numbers for all BCD series included, shown in parentheses. Release date information for additional series can be found in publications of the sponsoring agencies.

(Any inquiries about these series should be directed to the issuing agency.)

Date	*Subject*	*Data For*
February 1	Construction Expenditures (Press release), Census, C-30 (69)	December
1	Manufacturers' Shipments, Inventories, and Orders, Census, M3-1 (20, 65, 852)	December
2	Defense Indicators, Bureau of Economic Analysis (BEA) (625)	January
2	Open Market Money Rates and Bond Prices, Federal Reserve Board, (FRB) G.13	January
2	Condition Report of Large Commercial Banks, FRB, H.4.2 (72)	Week Ending January 26
3	Money Stock Measures, FRB, H.6 (85, 102, 103)	Week Ending January 26
3	Factors Affecting Bank Reserves and Condition Statement of Federal Reserve Banks, FRB, H.4.1 (93)	Week Ending February 2

Date	Subject	Data For
February 3	Manufacturers' Export Sales and Orders, Census, M4-A (506)	December
4	The Employment Situation (Press release), Bureau of Labor Statistics (BLS) (1, 21, 40, 41, 42, 43, 44, 740, 841-848)	January
7	Consumer Credit, FRB, G.19 (66, 113)	December
8	Monthly Wholesale Trade (Press release), Census, BW	December
9	Condition Report of Large Commercial Banks, FRB, H.4.2 (72)	Week Ending February 2
10	Money Stock Measures, FRB, H.6 (85, 102, 103)	Week Ending February 2
10	Factors Affecting Bank Reserves and Condition Statement of Federal Reserve Banks, FRB, H.4.1 (93)	Week Ending February 9
10	Advance Monthly Retail Sales (Press release), Census (54)	January
11	Wholesale Price Index (Press release), BLS (55, 58, 750, 751, 752)	January
15	Food Assistance Programs Results, Agriculture	December
15	Yields on FHA Insured New Home 30-year Mortgages, HUD (118)	February 1
15	Industrial Production and Related Data, FRB, G. 12.3 (47, 853)	January
16	Housing Starts (Press release), Census, C-20 (28, 29)	January
16	Manufacturing and Trade: Inventories and Sales, BEA (31, 56, 71, 851)	December
16	Condition Report of Large Commercial Banks, FRB, H.4.2 (72)	Week Ending February 9
17	Money Stock Measures, FRB, H.6 (85, 102, 103)	Week Ending February 9
17	Factors Affecting Bank Reserves and Condition Statement of Federal Reserve Banks, FRB, H.4.1 (93)	Week Ending February 16
17	Selected Data on International Transactions of the United States (BEA)	4 Q '76
17	Personal Income, BEA (52, 53)	January
18	Consumer Price Index (Press release), BLS (781, 782, 783, 784)	January

Date	Subject	Data For
February 18	Real Earnings (Press release), BLS (741, 859)	January
18	Gross National Product (Revised), BEA (200, 205)	4 Q '76
22	Advance Report on Durable Goods, Manufacturers' Shipments and Orders (Press release), Census (6, 24, 25, 96, 647, 648)	January
23	Average Yields of Long-Term Bonds, Treasury Bulletin (115, 116)	December
23	Condition Report of Large Commercial Banks, FRB, H.4.2 (72)	Week Ending February 16
24	Money Stock Measures, FRB, H.6 (85, 102, 103)	Week Ending February 16
24	Factors Affecting Bank Reserves and Condition Statement of Federal Reserve Banks, FRB, H.4.1 (93)	Week Ending February 23
24	Productivity and Costs in Nonfarm Business and Nonfinancial Corporations, BLS	4 Q '76
28	Labor Turnover in Manufacturing (Press release), BLS (2, 3)	January
28	Work Stoppages (Press Release), BLS	January
28	Export and Import Merchandise Trade, Census, FT-900 (500, 502, 512)	January
28	*Composite Indexes of Leading Coincident and Lagging Indicators (Press release), BEA	December-January
28	Agricultural Prices, Agriculture	Mid-February

* Replaces Advance Business Conditions Digest

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Price 85 cents (single copy). Subscription Price: $9.70 domestic postpaid; $3.30 additional foreign mailing.

AGENCY REPRESENTATIVES FOR DISTRIBUTION AND NEWS ITEMS

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